DEC. 23 1960

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

Merry Christmas

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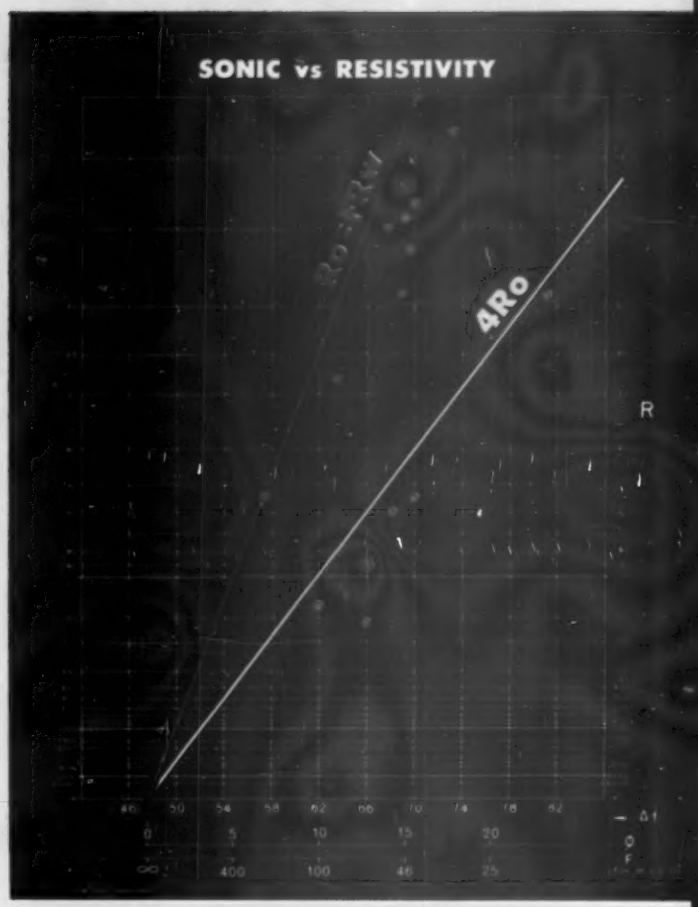

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Views That Make News

Dear Sir:

I wish to call to your attention an inaccuracy in the article, "Geochemistry to Get Full-Fledged Test as Exploration Technique" [PW—Dec.2'60,p34].

The geochemical survey of the Heidelberg area, Jasper County, Miss., was conducted by us in 1944 as an experimental project, at our own expense, and not, as PETROLEUM WEEK stated, for Gulf Oil Corp. Periodically, as the survey progressed, the results were shown to several geologists. Later, the data were published in Geophysics (Vol. 10, No. 4, October, 1945). We have been using the geochemical survey of Heidelberg as one of our important exhibits ever since.

I am sure that Gulf acquired most of its leases at Heidelberg prior to drilling the discovery well. If additional leases were taken on the basis of our survey, we are most pleased.

I should like to take this opportunity to thank you for your interest in geochemical exploration, evidenced by the considerable space devoted to it from time to time in your publication.

LEO HORVITZ
Owner
Horvitz Research Laboratories

Dear Sir:

In your article "Heating Oil Progress: Good and Bad" [PW—Dec.2'60, p67] the implication is given that Oil Heat Institute of America has somehow been lukewarm on the subject of setting up an over-all oil heat industry organization.

We find this implication at this late date rather astonishing, in view of the statements that the Oil Heat Institute officials were putting out well in advance of the closing date of your Dec. 2 issue.

All of this is water over the dam, but we will be most grateful if you will make it perfectly clear to your readers that Oil Heat Institute of America is wholeheartedly enthusiastic about the proposed "one world" organization for oil heat, and is doing everything within its power to hasten the day when this organization is in being.

ROBERT D. MYERS
Public Relations Council
Oil Heat Institute of America

Dear Sir:

We compliment you on your nice article "Cheaper Tanks for Liquefied Gases" (PW—Nov.11'60,p103). We believe that articles such as this will receive wide attention and promote much interest.

In the fifth paragraph of the story, on page 104, mention was made of the cost of tank storage of liquid methane. The cost figure shown should read ". . . between $2.50 and $3.35 per Mcf. for storage of liquid methane in double wall tanks." Chicago Bridge & Iron Co. has built the only United States' double-wall, flat-bottom methane storage tank, at Lake Charles, La., for Constock. Of course, we have been very active of late making designs and quotations for different and larger sizes of similar methane storage tanks, and believe that someone must have missed in transferring dollars per bbl. costs of $9 to $12 per bbl. of liquid methane storage cost per Mcf.

New materials such as 9% nickel plus greater volumes of liquid methane storage may very well bring the above quoted prices for tankage below the figures given.

MERWIN B. CLAPP
Contracting engineer
Chicago Bridge & Iron Co.

"The United States must be spending $40 billion annually, twice the present figure, for education in 1970 if we are to keep ahead of the Russians. . . . Russian science, since the launching of Sputnik, has been growing rapidly and their scientists are already working on drawing boards and in laboratories for such 21st Century wonders as airborne taxis, the harnessing of volcanos, nightless cities, and the adding of years to many humans lives."

—RALPH C. READ
Vice-president
Central Scientific Co.
Cenco Instruments Corp.

"Needless to say, we plan no relaxation but rather an intensification of our pursuit of new ideas about our business."

—M. J. RATHBONE
President
Standard Oil Co.

PETROLEUM WEEK will publish reader comments each week. Address letters to LeRoy Menzing, Editor, PETROLEUM WEEK, 330 W. 42nd St., New York 36, N. Y.

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INSIDE *Slant*

DEAR SANTA: MORE UNITY

There is one big request that we have for Santa:

More unity within the industry, particularly with regard to the imports control plan.

The present mandatory plan is almost effective, but it still needs a little push to make it more effective.

It must be recognized that there is no painless middleground. You either keep strangling the independent segment of the industry or you must take the advantage out of imports.

The present plan goes right up to the border line and stops, which is the tragic part.

And every time there is even a hint that crude imports might be cut, or some revision made in the plan, there are threats that the mandatory program will be hauled into the courts.

Whether it would fall or not under such an attack is a legal question.

But it is a sad commentary that some always want an advantage.

A small cut, even 100,000 to 200,000 b/d, would help a lot.

But the plan could be even more effective if a duty of some sort also was attached.

Santa, why not eliminate all the squabbling by placing a sufficient duty on imports?

LeRoy Menzing
Editor

Good Wells Make Good News

A Report on Some Recent Interesting Acidizing Treatments

December 23, 1960

New acidizing techniques -- with or without supplementary Dowell materials -- continue to extend the usefulness of acid treatments for stimulation. Here are four recent examples:

- **Franklin County, East Texas** (New Gas Well) This well was completed through perforations from 11,990 to 12,320 feet. Pay was limestone. Production before treatment was only 400 mcfd through a 22/64-inch choke. Dowell engineered a 6-stage acid treatment to stimulate the more permeable sections of the pay. Materials used included 30,000 gallons Retarded Acid, 10,000 gallons regular Dowell acid with surfactant added, and 4536 gallons Fixafrac* temporary plugging material. Each stage consisted of 1000 gallons regular acid, then 3000 gallons Retarded Acid, followed by 15 barrels temporary plug. Tubing pressure was 6000 psi maximum. Injection rate was 7.8 bpm maximum. After treatment, well produced 6400 mcfd through a 28/64-inch choke -- 16-fold increase.

- **Smith County, Mississippi** (Old Oil Well) This well was completed into the Wells sand through perforations from 13,801 to 13,812 feet. Before treatment, well was making 83 bopd through a 9/64-inch choke. Dowell treated with 500 gallons Super Mud Acid, spearheaded by 10 gallons Freflo* surfactant in oil, 20 gallons Freflo in oil followed the acid. After treatment, well flowed 237 bopd and 1200 mcfd of gas through an 8/64-inch choke. Flowing pressure was 2600 psi.

- **Wilbarger County, North Texas** (New Oil Well) Considerable mud had been lost in the Caddo lime and the well made no oil upon completion. Dowell designed a treatment using the Acid Guide*. 500 gallons BDA* (Breakdown Acid) was squeezed into the pay and the well flowed 10 bopd on test. Then, 9500 gallons Retarded Acid (acid-oil emulsion type) were injected at 5 bpm. After swabbing, well flowed 420 bopd and is now producing 56 bopd.

- **Swan Hills Area, Alberta, Canada** (Old Oil Well) Pay was the Slave Point Mid-Devonian vuggy lime. Well was completed about one year ago through perforations from 9068 to 9086 feet. Initial production looked good after small acid job, but soon dropped off to nothing. Recently, Dowell acidized using 4000 gallons Retarded Acid (acid-oil emulsion type) and 500 gallons Dowell regular acid with surfactant and demulsifier added. Materials were applied in following order: 2000 gallons Retarded Acid, 20 ball sealers, 250 gallons regular acid, 1000 gallons Retarded Acid, 250 gallons regular acid, and then 1000 gallons Retarded Acid. Final injection rate was 6 bpm at 3500 psi. After clean-up, well made 218 bopd on an 11/64-inch choke. Operator is considering this type stimulation for all his wells in area.

Dowell engineers have a number of new acidizing ideas on how to help you improve your net profits. For service or more information, call Dowell. Dowell services and products are offered from more than 150 offices and stations in the United States, Canada, Venezuela, Argentina, Germany, France and the Sahara area. Dowell, Tulsa 1, Oklahoma.

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60-Second Summary / WHAT'S HAPPENING IN OIL

December 23, 1960

dept/INDEX

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A pattern for settlement of union wage demands emerged this week, but it'll cost the industry $100-million or more a year. And earnings have been posted that oil consumers will have to foot the bill by paying higher prices for products. . . . p. 13

•

Continued cold weather may give heating oil prices a good shot in the arm. An upward move got under way last week, and talk of discounts has faded at the Gulf. . . . p. 40

•

A shutdown order for Utah's Lisbon field appears likely next week. The state conservation commission wants production halted until conservation programs are formalized, and a decision is pending. . . . p. 18

•

New Year's Day will mark the official beginning of the "Battle of the Standards," an affray that has been abuilding for the past several years. Principal opponents are all ex-members of the old Standard Oil Trust, which was dissolved in 1911 by the U.S. Supreme court. . . . p. 11

•

Shell's deal with Kuwait involves more than the usual profit-sharing commitments. Shell has agreed to help the Kuwait government transport, refine, and market overseas—a new angle for international oil companies. . . . p. 15

•

A Chicago utility is experimenting with a "gas bubble" technique for underground storage beneath flat caprock. If it succeeds, it will mean that more gas can be stored close to big consumption areas. . . . p. 30

•

Residual fuel oil allocations for the eastern U.S. were increased by 43,000 b/d for the fourth quarter, due to the unseasonably cold weather. But the allocation of crude and unfinished oils for the West Coast for the first half of 1961 were cut 12.9%, to 229,304 b/d. . . . p. 12

•

Contract maintenance is gaining popularity in the processing field. It is believed to be heralding a new era of understanding between management and labor. . . . p. 27

•

Demand for liquefied petroleum gas in 1960 rose 10.5% to a peak of 9.9-billion gal. The strongest gain in demand came from petrochemical processors, up 20% over 1959. . . . p. 13

•

Is Sun going in for private-brand marketing? And is Tidewater taking a fling at multigrade gasolines? Recent developments in Wilmington, Del., indicate these are possibilities. . . . p. 36

Up to the Minute

SIGNIFICANT LATE NEWS

December 23, 1960

The Bureau of Mines estimates that total demand for petroleum in 1961 will average 10,054,000 b/d, a gain of 1.7% over 1960. Domestic demand is expected to average 9,859,000 b/d, up 1.8%. "It is anticipated that improvement in general business activity will take place in the third quarter of 1961," the bureau states. It predicts that total demand in the first half will show a rise of only 0.7%, while a 2.6% gain is forecast for the second six months of the year.

Domestic crude production is expected to rise 2.7% over 1960, to an average of 7,210,000 b/d, and domestic crude will furnish 81.9% of the total expected new supply of 9,983,000 b/d, compared with 81.4% in 1960. The bureau expects crude imports to average 1,023,000 b/d, down 0.5% from 1960, and product imports to average 783,000 b/d, down 0.6%.

•

The Military Petroleum Supply Agency says there is little it can do to trim overseas spending for petroleum. It has recommended to the Pentagon that no major changes be made in petroleum procurement policies, regardless of the order from President Eisenhower to all agencies to cut spending abroad to help ease the balance-of-payment deficit. The military oil officials rejected a stringent "buy America" policy and turned down recommendations by the Independent Petroleum Assn. of America for sweeping changes in procurement. Total foreign purchases average 250,000 b/d, according to IPAA.

•

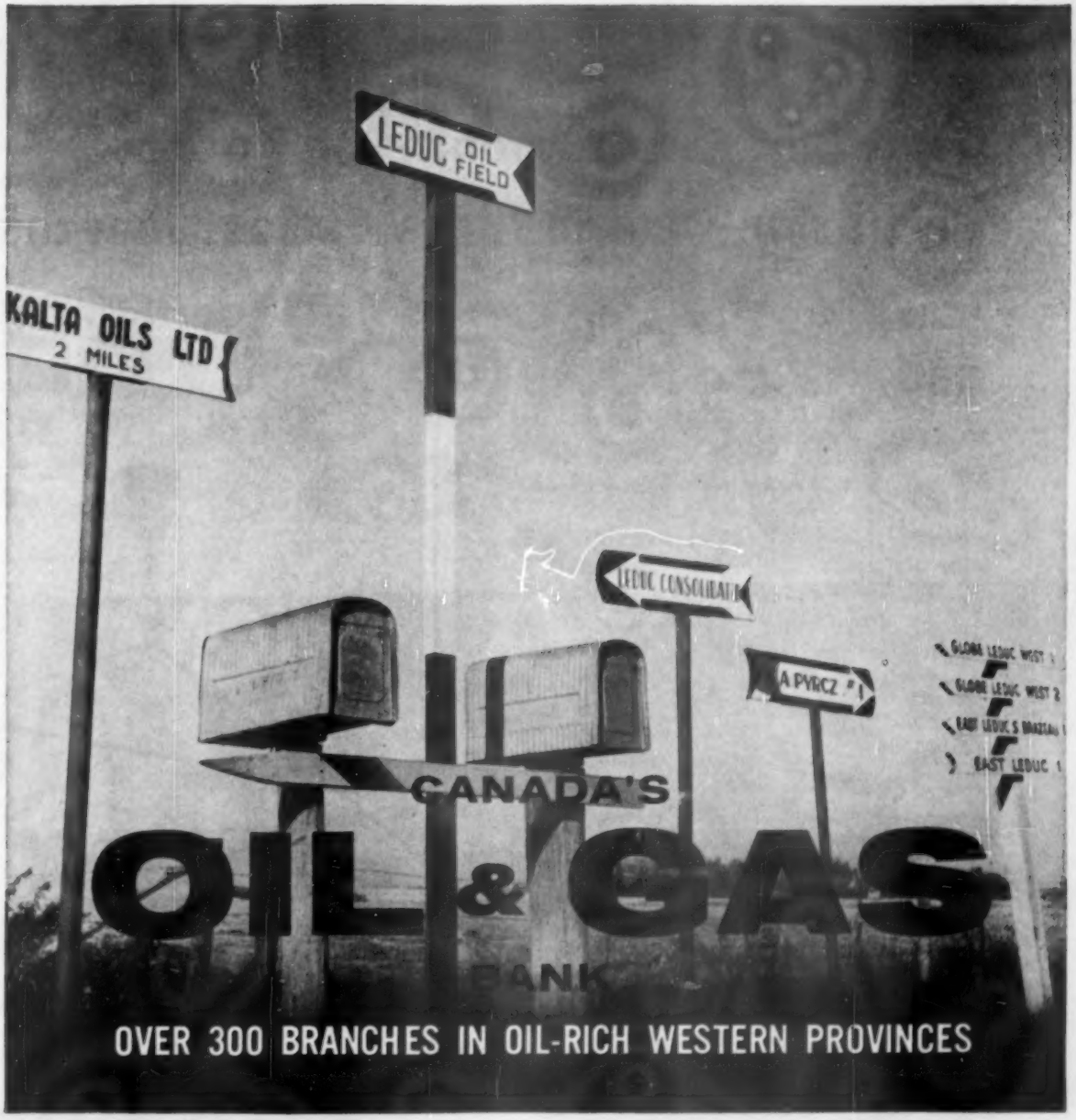
Standard Oil Co. (N.J.) has budgeted $1.1-billion for capital and exploration expenditures in 1961. More than half of the $200-million programmed for the search for oil and gas will be spent in the U.S. Of the total worldwide outlays, 45% will go into exploration and producing, 25% for refining, 16% for marketing, and 14% for transportation and other facilities. Jersey's 1960 earnings are expected to be the highest since 1957's $805.2-million.

•

Tennessee Gas Transmission Co.'s plans for a Texas-to-California-via-Mexico gas line was set to be filed in Washington this week. It wants Federal Power Commission approval to transport gas purchased in South Texas by Southern California Edison Co. from Humble Oil & Refining Co., to Los Angeles, for use as boiler fuel. It will need an export permit for the U.S. gas and an import permit for Mexican gas to be bought by the utility. FPC's view is expected to be shaped by a boiler-fuel transportation case involving Transcontinental Gas Pipe Line Corp., and Consolidated Edison Co. of New York, which is now before the U.S. Supreme Court.

•

National Supply Co. and Union Wire Rope Corp. will be merged into their parent, Armco Steel Corp., on Dec. 31. Sidney A. Shuman, formerly assistant to the president of National Supply, will be vice-president and general manager of the National Supply Division of Armco (page 16). James H. Hatch will continue as general manager of Union Wire Rope.



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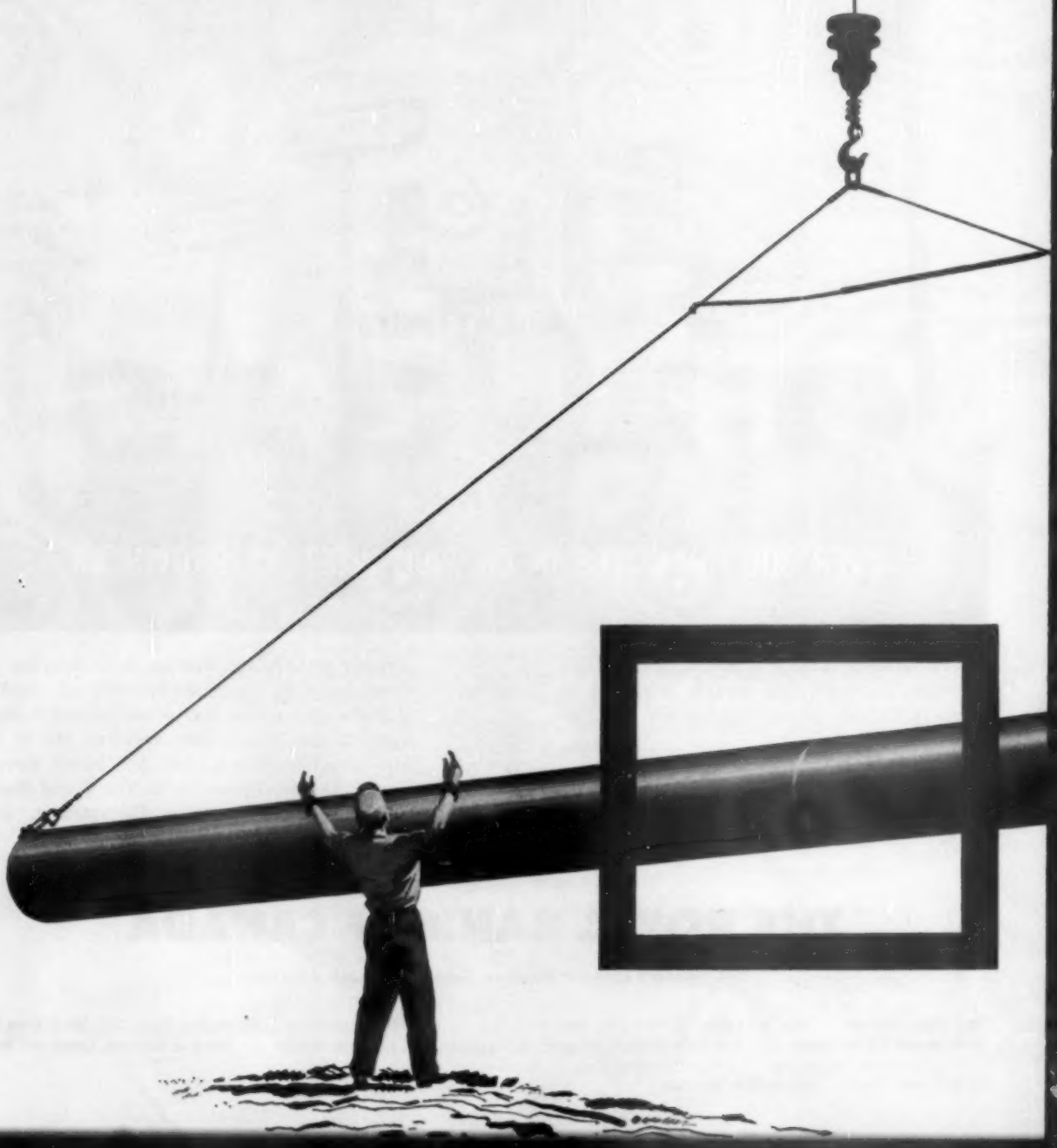

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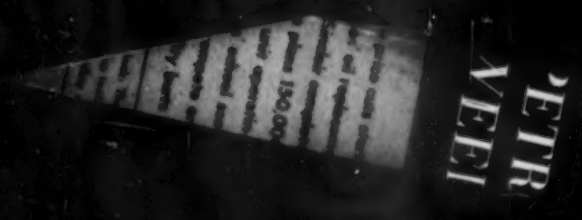

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PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

110 WEST 42 STREET, NEW YORK 36, N. Y.

ABC ABP

OIL'S MOST READABLE MAGAZINE

'Standards' Gird for Market Battle

Come Jan. 1, the "Battle of the Standards" will be joined in full heat. Inescapable now, it will keep the industry throbbing from coast to coast for the next decade or so.

It has been in the making for the past several years—a classic example of the dog-eat-dog pressures of competition, growth ambitions, and surpluses of products and capacities.

And there's little room to doubt, at this point, that it'll be a humdinger of a fight for outlets, customers, position, prestige, and profits.

The principal opponents are Standard Oil Co. (N.J.), Standard Oil Co. (Ind.), Standard Oil Co. of California, and Socony Mobil Oil Co.

Socony, although now only a "Standard" company by contraction of its name, is nevertheless still a big chip off the old Rockefeller block.

All are former members of the old Standard Oil "trust," which was put out of business as an entity by the historic dissolution decree of the U.S. Supreme Court in 1911.

Each has grown substantially since then. Each is a jealous custodian of the "Standard" rights and market privileges spelled out by the Supreme Court decision.

There have been skirmishes and legal battles over territorial encroachments through the years. But recent corporate realignments have changed the picture and have opened the door to full-scale national competition.

This is the key to the impending battle.

To hurdle the legal barriers proscribing use of the "Standard" name in each other's territory, three of the "Standards" reorganized themselves, in whole or part. Socony didn't have the "Standard" tag, but it revised its domestic setup too.

- Jersey Standard chartered Humble Oil & Refining Co. in Delaware as a new affiliate to handle production, refining, and marketing operations (PW—Sep.11'59,p13).
- Indiana Standard, effective Jan. 1, is putting all of its manufacturing and marketing activities under one roof, that of American Oil Co. (PW—Jul.15'60,p15).
- And Standard of California, also effective New Year's Day, brings a new California Oil Co. into being as a superstructure over its principal U.S. subsidiaries, exclusive of those in the Far West (PW—Sep.23'60,p23).
- Socony made its official changeover last Jan. 1. At that time, Mobil Oil Co. became its domestic subsidiary in charge of producing, refining, and marketing (PW—Dec.18'59,p18).

All four companies thus became parent corporations, and the subsidiaries, established corporate identities which could be used throughout the U.S.

It's true, of course, that they have been marketing competitively via subsidiaries and affiliates right along. From the homogenization process, however, has emerged single firms with integrated marketing concepts and streamlined operations on a national scale.

In the amalgamations and reorganizations, a handful of old-time companies vanished, or will vanish, from the domestic scene.

Jersey's Humble deal involved Humble Oil & Refining Co. of Texas, Carter Oil Co., Esso Standard Oil Co., Oklahoma Oil Co., and Pate Oil Co.

These were first converted into divisions of the new Humble of Delaware, then were changed again only last week.

Four operating regions for exploration, marketing and production were established along geographic lines, with regional offices in New York, Tulsa, Houston, and New Orleans.

General headquarters will remain in Houston.

What all this means, however, is that the four operating divisions and their officers and boards of management will cease to exist.

American Oil's consolidation gobbled up Utah Oil Refining Co. while California Standard's embraced the old California Oil Co., the California Co., Standard Oil Co. of Texas, and Salt Lake Refining Co.

Socony's streamlining swept Magnolia Petroleum Co. and General Petroleum Corp. out of existence.

The big thing, however, is that the Standard companies have stripped for action, and are plunging full scale into the national market battle.

It's no secret that all four want to peddle their products not only from coast to coast, but in all the states in between.

Hawaii and Alaska are provocative lures, too, if only to enhance the prestige of each company as a mar-

NEXT WEEK

Be Sure to Read:

A BRIGHTER OUTLOOK for Next Year . . .

Leading economists are predicting that total demand for all oils will rise 2% to top 10-million b/d for the first time. Some expect that 1961 could be the most profitable for oil, despite an anticipated dip in the nation's general economy.

DRILLING May Take a Slight Upturn . . .

Forecasts now indicate that 1961 will be at least as good a year in completions and footage as 1960. Activity is expected to be strong in several areas, which could lead to an increase in over-all drilling.

keter in all 50 states of the Union. This could mean that the national scene is going to get a bit crowded.

Texaco Inc. heretofore has had a monopoly on the national title. It markets in 49 states now, and plans to enter Hawaii early next year, so it can retain its claim of being the only 50-state operator.

American Oil will be in 45 states on Jan. 1, and will have limited marketing in three others, for a technical total of 48. Mobil markets in 45 states, too, but it has its eye on expansion. Humble, which started out with 37 states, now has 41—an increase of four in the past year.

Others in the 40-plus class are Sinclair Oil Corp. and Shell Oil Co. If they start moving too, the national picture could see a half-dozen or more companies vying for outlets and customers in every state.

The fact that Jersey Standard's entry has added four states to its total this year is a measure of things to come.

Humble went into California, Nevada, Oklahoma, and Ohio this year. Admittedly, the representation is thin in some areas, but it's a big step along the road.

Humble's weak spots are in the Southeast, the Midwest (Kansas Missouri, and Minnesota. These are the states to watch, then, for future developments.

Public Benefits

The "Battle of the Standards" that's getting under way now could do much to dispel public —and industry—misconceptions about the kinship of the "Standard" companies.

Many people, and quite a number of oil employees, fully believe that the Standard companies have clandestine relationships, and that, really and truly, they aren't competitors after all.

The events of the next decade, as these companies lock horns for markets and customers, should make it plain, once and for all, that they're not only competitors—they're almost antagonists.

American's biggest holes are in the Southwest and the West Coast—specifically, Arizona, New Mexico, and California. It has limited marketing there now—motor oil only. For the moment, then, these are the expansion possibilities.

California Oil Co.'s position is improving in the East, and it's solid in the West, via Standard Oil Co. of California, Western Operations, Inc.

There have been reports that Socal is looking at Standard Oil Co. (Ky.) as a possible route to the Southeast. If such a deal should materialize, it would give the California company close to 10,000 additional outlets in Alabama, Georgia, Kentucky, Mississippi, and Florida.

Brand names and identities are still problems, however.

Humble is experimenting with Enco, but its top management, and that of Jersey Standard, aren't satisfied yet. An indication of that was last week's announcement that, even though the operating divisions are being abolished, multiple brand names, such as Carter, Pate, and so on, would be retained for the time being.

Humble is, however, building the Humble name from coast to coast.

American is capitalizing on its corporate name, but hasn't straightened out all of the kinks on brand identification yet.

The California Oil Co. is using Socal's Chevron, and Mobil solved its problem when it took its corporate title from its brand name.

Another Standard company that is anxious to get going is Standard Oil Co. (Ohio). Sohio's executives have been trying to expand for several years. The Justice Dept. frustrated a proposed linkup with Leonard Refineries in Michigan earlier this year by threatening to file an antitrust action. That was a discouraging blow, but they haven't given up.

West Coast Imports Quota Cut 12.9%

The Interior Dept., which has kept the industry guessing on imports for several weeks, came up with two surprises this week—an increase in East Coast residual allocations and a cut in West Coast crude quotas.

A supplemental allocation of 4-million bbl. of residual fuel oil was granted to the 32 authorized importers in Districts I-IV. Interior officials said the increase was granted to help meet the extra demand caused by unseasonably cold weather.

The supplemental allocation will be divided proportionately among the importing companies and the U.S. Military Petroleum Supply Agency.

The increase means that the Districts I-IV allocation for the last quarter will average 458,000 b/d, instead of the 415,000 b/d originally granted. Actual residual imports in the fourth quarter of 1959 averaged 434,441 b/d.

The crude and unfinished oils import allocations for District V for the first half of 1961 will average 229,304 b/d, a reduction of 12.9% from the present quota, but slightly above the quota for 1960's first half.

Oil Import Administration officials attribute the cut almost entirely to a "normal" reduction in West Coast demand in the first half of the year, compared to the six months just ending.

Products imports permitted West Coast companies in the January-June period of 1961 will continue unchanged at an average of 10,619 b/d.

The crude and unfinished quota was decided after the Bureau of Mines estimated that the difference between West Coast supply and demand will amount to 280,000 b/d in the first six months of 1961.

From that figure, an average of 40,000 b/d of exempt. Canadian crude and unfinished imports was deducted, leaving the supply to be procured from offshore at about 240,000 b/d.

The exempt imports from Canada —moving primarily into the Puget Sound area—have averaged close to 52,000 b/d for most of 1960.

The refinery input schedule has been adjusted downward slightly to effect the reduction in imports to the 28 West Coast importers.

The new refinery input scale starts at 42% of runs up to 10,000 b/d, decreasing to a ratio of 7.6% of runs over 200,000 b/d.

The ratios for the last half of 1960 started at 45% of runs up to 10,000 b/d and declined to 9.5% of runs over 200,000 b/d.

Interior officials were still holding back at midweek on what is expected to be the most significant import quota change—the first-half crude allocations for Districts I-IV.

Indications are that the government will go through with a reduction in quotas of about 60,000 b/d for crude and unfinished oils, with individual allocations being announced barely a week before the start of the import period.

Wage Pact Near; Higher Prices Too

Labor and management appeared to be on the verge this week of settling their 1960-61 wage controversy, at a probable cost to the industry of $100-million or more annually.

The icebreaker came last weekend as negotiating teams representing both sides tackled some 600 contracts in what the union had billed in advance as "collective bargaining week."

It brought an immediate warning, however, that product prices will have to go up to compensate for it.

This came from L. F. McCollum, president of Continental Oil Co., who said his firm's offer of 5% would cost about $4-million a year—"which cannot be absorbed from the present low profit margins."

Continental, he said, "has no choice but to attempt to recover this added cost by increasing the price of its products." Other companies, undoubtedly, will take a similar position.

Sinclair Oil Corp.'s offer of 14¢ an hour across the board, and its acceptance by the Oil, Chemical & Atomic Workers' national headquarters, indicate that this may be the pattern.

OCAW President O. A. Knight conceded that the Sinclair proposal "is 4¢ short of the goal set by our national bargaining policy committee . . . but we feel that it is the best we can obtain under the circumstances."

Knight also commented that "we are confident that it will serve as a pattern, and spread to all other companies within the next few days."

Local unions still have to ratify the agreement to make it official, but Knight's blessing, and that of the national policy committee, is expected to make this a routine matter.

Sinclair is regarded as the bellwether of the industry in contract negotiations, and the big thing about its offer was that it did not contain a "wage freeze" clause.

Virtually all of the management offers, prior to the Sinclair change-of-pace, proposed 5% increases, but with wages to be frozen for two years. The unions, for the most part, rejected them as inadequate and unsatisfactory.

Sinclair, however, is the only oil company that negotiates a master contract for its employees. Others negotiate on a local plant basis with OCAW and with independent unions.

It is anticipated that other companies will fall in line with the Sinclair proposal, assuming it is ratified by the various local unions.

Many of the companies are still sticking to the 5% figure, instead of the flat cents-per-hour increase demanded by the union. The difference is slight, but the unions prefer the latter because it makes all raises uniform and is a concession to lower-paid workers.

Although OCAW represents only about 100,000 oil employees, close to a half-million will get raises.

Some companies already have given 5% increases to salaried and nonunion employees. The 14¢ figure averages out to about $280 more per year for each employee, placing the cost to the industry at $100-million to $125-million a year.

LPG Sales Rise 10.5% in 1960

A sharp jump in demand for liquefied petroleum gas by petrochemical users helped to boost total LPG sales to a new high of nearly 9.9-billion gal. in 1960, according to a study by Phillips Petroleum Co.

The study by W. F. DeVoe, A. F. Dyer, and George R. Benz reported that 1960 sales were 10.5% higher than 1959's.

An estimated 3,031,000,000 gal., or almost one-third of total sales, were consumed in chemical manufacturing, an increase of 20% over 1959. An additional 550-million gal. were used in the manufacture of synthetic rubber, it was reported.

Sales for domestic and commercial uses rose 10% over 1959, to 4,328,000,000 gal.

Indications point to further sharp increases in petrochemical demand, since approximately 120 new plants are either under construction or planned for the near future.

Included in the construction of petrochemical facilities are major additions to existing plants, synthetic rubber plants, and units that do not use natural gas or LPG as starting feedstocks.

Only 47 such projects were under way in September, 1958, the study found, indicating that the "increasing demand for petrochemicals in 1959 and early 1960 had reduced the margin between plant capacity and customer requirements to the point that expansion of capacity became desirable."

Polyethylene continued to expand its markets in 1960 at a more rapid rate than its chief light hydrocarbon volume rivals, ethylene oxide and ethyl alcohol, according to the study.

The preference for propane over butane as a feed stock was accelerated in 1960, due to its lower cost, it was reported.

Demand for butanes and butylenes by refiners and synthetic rubber processors has reduced the supply in the markets, except at premium prices.

Venezuela Group Hits Oil Policy

Venezuela's National Economy Council, a top-level government advisory body, has recommended revision of the country's controversial oil policy to President Romulo Betancourt.

The aim is to increase exploration, expand oil production, and encourage reinvestment of oil company profits through income tax reduction.

The council criticized policies of Oil Minister Juan Perez Alfonzo on prices, as well as production limitations, and pointed to the adverse effects of Venezuela's policy of not granting any more oil concessions.

The council also cited the "risks" involved in Venezuelan participation in OPEC, the Organization of Petroleum Exporting Countries, which was formed with major Middle East producing states.

It declared that Venezuela's loss of position as a producing country will benefit other countries "with a better-oriented government policy."

Specifically, the council recommended that the government:

- Revise the national oil policy with the aim of intensifying exploration and allowing greater flexibility for the industry so that production can be expanded;
- Promote a rate of growth of production in keeping with the rate of growth in world demand;
- Create the necessary incentives so that oil companies will reinvest in the country a substantial part of their profits.

Stock Data Show Higher Desired Level

The industry's desired stocks on Oct. 1, based on reports of companies refining 74.2% of the crude, were:

(stocks in millions of bbl.)

	Oct. 1 Actual	Oct. 1 Desired	Difference
Crude	231.9	241.8	— 9.9
Gasoline	187.4	197.8	—10.4
Kerosine	35.2	36.4	— 1.2
Distillate	169.0	189.3	—20.3
Residual	50.3	43.3	+ 7.3
Total	673.8	708.6	—34.8

The Dec. 1 position of the industry, based on reports of companies refining 74.7% of the crude, was:

(stocks in millions of bbl.)

	Dec. 1 Actual	Dec. 1 Desired	Difference
Crude	238.3	249.0	—10.7
Gasoline	187.2	200.7	—13.5
Kerosine	36.9	37.8	— 0.9
Distillate	172.6	191.7	—19.1
Residual	49.3	44.8	+ 4.5
Total	684.3	724.0	—39.7

An interpretation of last spring's reports by the companies would place the Dec. 1 position as:

(stocks in millions of bbl.)

Dec. 1 Desired	Difference, "Old" and "New" Desired
252.5	— 3.5
162.8	+37.9
29.6	+ 8.2
138.1	+53.6
46.4	— 1.6
629.4	+94.6

The industry, or at least the companies that run 74.7% of the crude processed in the U.S., refuses to admit that its inventories are out of balance.

That is the deduction that can be made from the latest reports of 39 companies, made last week to the Texas Railroad Commission.

The companies reported that their own Dec. 1 stocks of crude and major products were 8,462,000 bbl. below their estimated desired level.

Their stocks of crude totaled 177.5-million bbl., 8.5-million less than desired; gasoline, 153.2-million bbl., 3.2-million more than desired; kerosine, 27.5-million bbl., 741,000 less than desired; distillate, 143-million bbl., 207,000 less than desired; and residual, 31.3-million bbl., 2.2-million less.

Extending the desired positions of the reporting companies to cover the entire industry shows that gasoline inventories are below desired levels, despite comments by many companies on the motor fuel surplus.

The "shortage" position on gasoline of 13.5-million bbl. on Dec. 1 (table, above), was greater than the level on Oct. 1, when the companies last reported to the commission.

The indicated industry desired level for gasoline on Dec. 1 of 200.7-million bbl. is 27.9-million bbl. higher than the companies indicated last March.

The allowables set so far for January in several major states indicate crude output next month will average about the same as December.

Texas continued its nine-day producing schedule, with the initial allowable set at 2,799,157 b/d, unchanged from mid-December. New Mexico's allowable will go up slightly due to the addition of 1 b/d to the unit allowable in the southeast, to 35 b/d.

Louisiana's January-February allowable will be unchanged.

Some Refiners Continue to Run at High Rate

(barrels daily)

	September	November	Change
American Petrofina	6,807	6,059	— 748
Atlantic Refining	162,319	197,096	+34,777
Bell Oil & Gas	6,390	6,678	— 288
Bryson Pipe Line	488	461	— 27
Cactus Petroleum	2,658	3,110	+ 452
Century Refining	.....	2,656	.....
Cities Service	259,558	253,533	— 6,025
Continental Oil	173,512	172,639	— 873
Cosden Petroleum	37,598	36,351	— 1,247
Crown Central	34,462	33,608	— 854
Danaho Refining	4,000	4,125	+ 125
El Paso Natural	.....	19,214	.....
Gulf Oil	453,000	461,000	+ 8,000
Humble Oil & Refining	817,000	772,000	—45,000
Indiana Oil Purchasing	626,800	585,200	—41,800
LaGloria Oil & Gas	16,800	16,897	+ 97
Monarch Refining	2,431	2,427	— 4
Ohio Oil	.....	102,000	.....

(barrels daily)

	September	November	Change
Phillips Petroleum	204,900	204,400	— 500
Plymouth Oil	22,856	24,034	+ 1,178
Premier Oil Refining	14,884	12,002	— 2,882
Pure Oil	165,113	155,586	— 9,527
Rado Refining	818	765	— 53
Shamrock Oil & Gas	24,240	20,398	— 3,842
Shell Oil	538,784	517,800	—20,984
Signal Oil & Gas	49,288	49,659	+ 371
Sinclair Crude Oil	412,400	422,500	+10,100
Skelly Oil	51,153	35,175	—15,978
Socony Mobil Oil	582,000	577,000	— 5,000
Sohio Petroleum	144,900	119,900	—25,000
Standard of Texas	41,092	44,196	+ 3,104
Sun Oil	199,200	174,989	—24,211
Suntide Refining	40,107	40,455	+ 348
Texaco	663,591	637,474	—26,117
Tidewater Oil	239,000	193,500	—45,500
TOTAL	**5,998,149**	**5,904,887**	**—93,262**

Shell to Aid Kuwait to Market Oil Overseas

KUWAIT—Royal Dutch Shell's winning bid for the highly coveted Kuwait offshore oil concession is unique in several respects—and may open a new chapter in relations with producing governments.

True, the 45-year concession agreement provides and reaffirms the standard 50-50 profit-sharing terms.

And the high bonuses and other payments offered by Shell—though they total over $100-million—are nothing new in themselves.

What is new, however, is Shell's agreement to sell Kuwait a 20% participation in its development company if oil is found.

Even more significant, Shell has agreed to aid Kuwait in developing overseas transportation, refining, and marketing outlets for its share of this oil.

* * * *

This is the first time any large international company has agreed to joint government participation in a major Middle East concession.

Partnership agreements have been made before this, by Pan American International and Italy's ENI, in Iran. These called for the concessionaires to bear all exploratory risks, and exploratory costs up to stated limits. In Shell's case, however, although the company will bear the exploratory risks, when Kuwait exercises its option it will have to pay its share of all exploratory costs up to the time of participation, as well as its pro-rata share of all further development and exploration expenses.

In other words, Kuwait's share will not be carried by the company; it will be a true partner.

Kuwait can take its share of the production in kind or in cash. Shell is to handle Kuwait's share "until such time as Kuwait establishes its own marketing outlets," the government has announced.

Shell has agreed to market Kuwait's 20% share of the production, or any part thereof, at posted prices minus 10%, or actual realizations, whichever is higher.

* * * *

What Kuwait has in mind, according to authoritative government officials, is to turn over the government's 20% option to the newly formed Kuwait National Petroleum Co. (60% of which is owned by the government, with the remaining 40% share recently having been sold to private Kuwaiti nationals).

KNPC, in turn, is to use its share of the Shell production—plus other sources of oil it may acquire—to enter step by step into overseas marketing, including transportation and refining.

What Shell has agreed to in this respect is to "consider in a friendly spirit any possibility of cooperation which may develop in the course of time for the promotion of these interests of KNPC."

As is evident from the above, this commitment on overseas assistance is couched in the vaguest terms for the moment. No attempt has been made to commit Shell to any particular joint refining or marketing venture overseas, nor to any particular market area, at this early stage of the game.

But there's no doubt that Kuwait considers this a firm commitment by Shell. "It's a question of good faith on the part of both parties," says a top Kuwaiti official. "And we do not question Shell's good faith in living up to its word—the spirit, as well as the letter, of its word."

Whether the provision for overseas cooperation will be inserted in the actual concession agreement now being drafted in London, or handled in an exchange of side letters, has not yet been determined.

According to government sources here, Shell has agreed to charter three Kuwaiti tankers as soon as they're offered, even before the start of its Kuwait operation, and to give Kuwaiti tankers a priority at competitive terms whenever it goes into the charter market for tonnage. (Currently, Kuwait owns only one tanker, which is on charter to British Petroleum Co.

* * * *

Shell's bonus and other payments are also the largest on record for any Middle East concession.

Shell agreed to pay a rental of 1-million pounds sterling ($2.8-million) for each of the first two years, and 2-million pounds ($5.6-million) per annum thereafter, until regular exports commence.

In addition, it agreed to total bonuses of 30-million pounds ($74-million).

Of this, 7-million pounds ($19.6-million) are payable upon the signing of the concession agreement next month. A second 7-million-payment is due at the end of the fourth year, or on reaching production of 100,000 b/d, whichever is sooner.

The remainder is to be paid in the form of production bonuses of four equal installments of 4-million pounds ($11.2-million) each when production reaches 200,000 b/d, 300,000 b/d, 400,000 b/d, and 500,000 b/d.

Thus, if commercial oil is not found, Shell's total liability amounts to 20-million pounds sterling ($56-million) by the end of the fourth year (two bonus payments of 7-million pounds each, plus four years' rentals), and 2-million pounds ($5.6-million) rental for each additional year thereafter.

Actually, Shell has the right to cancel its concession after three years, in which case its liability would amount to only 11-million pounds, ($30.8-millión)—the 7-million-pound original bonus, plus three years' rentals.

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What's New / IN THE INDUSTRY

A possible interprovincial battle may be shaping up in Canada for crude markets. British Columbia has officially asked four Vancouver refineries to consider using some British Columbia crude, displacing Alberta oil they now receive through the Trans Mountain Oil Pipeline. The four companies involved—Shell, British American, Imperial Oil, and Standard of British Columbia—have indicated that they are considering building a pipeline from the northeast British Columbia fields to the coast. Work has started on one line from the northeast fields to Dawson Creek by Trans-Prairie Pipelines. British Columbia is reported to be interested in moving oil from Dawson Creek to Vancouver by the government-owned Pacific Great Eastern Ry. The four companies own production in both British Columbia and Alberta.

•

Texas officials are planning a double-barreled counterattack to reinstate the severance beneficiary tax on natural gas. The Third (state) Court of Civil Appeals ruled last week that the tax violates the U. S. constitution, agreeing with Transcontinental Gas Pipe Line Corp. and others by a two-to-one majority. Attorney General Will Wilson planned an appeal to the Texas Supreme Court, and state officials indicate that the Texas legislature, which meets in January, may attempt to revamp the tax law to overcome the court's objections.

•

The gas industry will spend close to $1.2-billion in 1961 for new transmission and underground storage facilities, according to the American Gas Assn.'s annual forecast. Transmission line construction is scheduled to hit $1,060,000,000 next year, well above 1960's record high of $891-million. Underground storage expenditures are expected to top $100-million for the first time, compared with 1960 spending of $76-million. Projections for 1962 include $795-million for transmission facilities, and $115-million for underground storage additions. For all gas industry facilities, the 1961 forecast by AGA is for $2.2-billion, a one-year jump of 17.4%.

•

Continental Oil Co.'s senior executive echelon is taking on new responsibilities to handle "expanding domestic and foreign activities," according to President L. F. McCollum. Ira H. Cram, senior vice-president, will be assistant to the president, and will continue as chairman of the executive committee, and head of global and exploration policies. A. W. Tarkington, senior vice-president, will relocate in New York, and take on direction of foreign, corporate, and financial activities. Realigned responsibilities also are being given to John G. McLean, financial vice-president, and L. C. Peters, transportation and supply vice president. Harry J. Kennedy, senior vice-president, will retire Dec. 31. He has been with Continental for 41 years.

•

National Supply Co.'s Arthur W. McKinney is retiring. He has been with the company for 40 years, starting as a salesman in 1920 and achieving the presidency in 1954. Through the years, he has become one of the most widely known men in the oil field supply industry. He was one of the founders and former president of the Petroleum Equipment Suppliers Assn., is a member of the board of the American Petroleum Institute, and a past president of the Diesel Engine Manufacturers Assn. He also was credited with being one of the moving spirits behind the International Petroleum Exposition held every four years at Tulsa. McKinney's immediate objective is an extended vacation, after which his future plans will be made known.

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
December 23, 1960

Washington expects the State of Wisconsin to lead a legal attack on the Federal Power Commission's Phillips decision.

A court appeal will be filed soon, backed by several state regulatory bodies, city governments, and other groups reflecting the consumer view on gas regulation. Wisconsin officials apparently have volunteered for the role of chief spear-carrier for the appellants. The state's attorneys are among the most experienced in natural gas regulatory battles.

One major contention will be that FPC failed in its duty to set gas rates for Phillips' sales. FPC chose to dismiss the Phillips rate investigation while simultaneously establishing its area-pricing plan for fixing producer prices for gas. The court appeal by the Wisconsin-led bloc may constitute an attack on area prices, too. The impending appeal is expected to claim that FPC shirked its responsibilities by not establishing a price for Phillips' gas during the test year 1954, then taking more evidence to set prices for subsequent years through 1960.

•

Interior Secretary-designate Stewart Udall may have some ideas on expanding the forthcoming government helium-buying program.

Udall helped write the helium legislation in the House. As proposed by Interior Secretary Fred Seaton and backed by the White House, the helium program would have limited the gas source to natural gas pipelines. Extraction plants would have been built along pipelines, with the helium to be bought by the government and stored for future use.

Udall led a successful move to amend the bill, making clear Congress' intent that sources other than gas pipelines should be considered—the guide being purchase at the lowest feasible price. Udall had in mind particularly the Pinta Dome area in his home state of Arizona.

•

Arthur Kline continues as the Federal Power Commission's strong man on gas regulation. He will serve as vice-chairman of FPC again next year. The position usually rotates annually, but Kline has been reelected by the members.

The commission is moving toward Kline's idea of geological, not geographic, area pricing. Kline contends that the use of established regulatory districts for gas production is too rigid and arbitrary a formula for FPC. He prefers the establishment of geological areas as a truer guide. There is considerable sentiment for the switch among other commission members and within the FPC staff. Bu considerable geological data will have to be gathered through hearings a id field research.

•

U.S. observers think oil companies in Venezuela are now safe from new tax levies—for the present, at least. Washington believes Venezuela's new finance minister, Tomas Carrillo Batalla, will try to rescue the sagging Venezuelan economy without tapping foreign oil companies for higher taxes. If other ideas, including new money-borrowing devices and public-works expansion, fail, smaller companies and individuals may face tax rises before oil companies are hit again.

Lisbon Area Stays Hot Despite Hassle

Operators are increasing the tempo and range of drilling activity in the Lisbon area of Utah despite the prospect of an order to halt production temporarily in the field.

Utah's Oil & Gas Conservation Commission has said it will rule by Dec. 30 on shutting in the field, in San Juan County, pending development of a conservation program.

The commission announced earlier this month that Lisbon production should be curtailed on the ground that it is a retrograde gas-condensate pool which probably should have natural gas recycled to the gas cap, to prevent loss of gas liquids due to pressure drops.

Several companies submitted briefs last week to support their positions concerning the commission's proposal to shut in the field.

Those opposing a closedown are Pubco Petroleum Corp. and Belco Petroleum Corp., both active in the area.

Pure Oil Co., discoverer of the field, and Texas Gas Transmission Corp. have testified in favor of an immediate shutdown. Humble Oil & Refining Co. said it would not oppose the move, but favored drastic curtailment of production instead. Others agreeable to, or supporting, curtailment are Standard Oil Co. of California, Quintana Petroleum Corp., and Elliott Production Co.

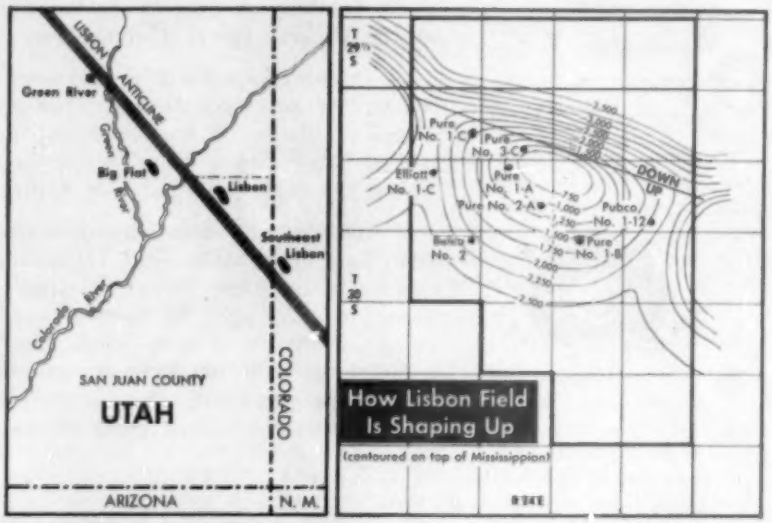
The Mississippian and Devonian sections, found productive along the Lisbon anticline, are still virtually untested in other areas of the big Paradox Basin.

Structural features along the trend include Big Flat, 35 mi. northwest of Lisbon, where the first discovery of Mississippian oil in Utah was made by Pure in 1957.

A series of ventures to the Mississippian followed the Big Flat discovery, but none were successful, and interest was waning when Pure hit again at Lisbon.

Another structural feature along the trend is Cane Creek, scene of a dispute between potash producers and the oil industry (PW—Sep.16'60,p 30). Testing of the Mississippian on Cane Creek proper must await mining of the potash.

Lisbon's Devonian production is the first in the basin. A handful of tests aimed to the Devonian were drilled in the basin up to around 1950, but emphasis thereafter shifted to the Pennsylvanian, following the major discoveries in the greater Aneth area.



LISBON FIELD is the focal point of activity along the Lisbon anticline, despite prospect of an order to curtail production pending conservation action by operators.

The area of special interest extends northwest towards the town of Green River, where the Grand Fault unit put together by Skyline Oil Co., Salt Lake City, was taken over by three majors.

Skyline, which controlled some 60% of the unit, farmed it out to Continental Oil Co. and Phillips Petroleum Co., with Phillips scheduled as operator. Superior Oil Co. of California later "bought in" on the Conoco-Phillips interest and will be "agent operator" on the first of two tests to be drilled to 10,000 ft. in the Devonian.

Estimates of reserves at Lisbon are another factor heightening interest in the area.

Pure officials told the Utah commission that Lisbon has a minimum of 235-million bbl. of liquid hydrocarbons in place. Gas reserves are estimated at 238-billion cu. ft.

Pure believes that primary recovery at Lisbon will yield 21.5-million bbl. of hydrocarbons. But if repressuring is not begun immediately, the firm believes, recovery will be only around 12-million bbl.

Pure said that surface extent of the field is only 6,400 acres. Pay zones in the lower Mississippian, however, range from 300 ft. to 500 ft., thus making vertical extent of the pay zones a highly significant factor, and offsetting somewhat the lack of areal extent.

Pure's testimony did not touch on the big gas reserves in the upper Mississippian, and a relatively smaller oil zone in the McCracken section of the Devonian.

Belco and Pubco engineers took a more optimistic view of surface area estimates and reserves. And Frank Gorham, Pubco's executive vice-president, told PETROLEUM WEEK, "We expect to find other fields near Lisbon, similar to Lisbon."

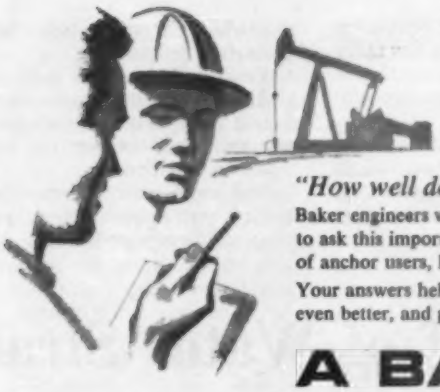
So, apparently, do many other operators—large and small—who have been bidding high on leases along the trend, from Green River, in Emery County, southeastward to San Miguel County, Colo., where Pure has completed gas-condensate wells at Southeast Lisbon.

Pure, itself, has some 80,000 acres in leases along the trend.

Commission engineers have indicated to Petroleum Week that it might be possible to produce some 15,000 b/d of oil at Lisbon from 15 wells.

This would depend upon strategic location of the wells in reference to the oil band believed to surround Lisbon condensate production.

At a 15,000 b/d rate, it would be economically feasible to build a pipeline from Lisbon to Aneth, in the



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Reduces Rod and Tubing Wear as evidenced by the need for fewer pulling jobs.

Increases Pumping Efficiency as measured in more barrels of oil, reduced pumping speeds or lower power consumption.

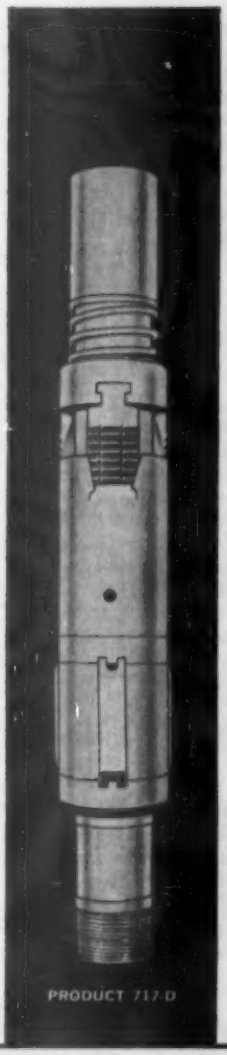
Really Does Compensate as indicated by the need to respace pumps after several days use, or by the upstrain required to release doughnut-type hangers—or, most importantly, by the results obtained.

The Baker Compensating Tubing Anchor has been on the market a little over three years. It has proved its ability in hundreds of wells and recent changes make it even better.

Because it automatically compensates for changing well conditions, it maintains the right amount of tension at all times to effectively eliminate breathing and buckling. It's easy to run—no involved calculations, no need to apply tension from the surface.

A careful study of hundreds of field reports reveals not one reported instance of inability to retrieve a Baker Compensating Anchor where the casing above the anchor was in good condition and to gauge. And recent design improvements now insure easier removal with greater freedom from corrosion.

The economics of today's oil industry make it more important than ever to explore every possible means of cutting costs and improving efficiency. Baker honestly believes that the Compensating Tubing Anchor is one such means. Your Baker Man has the facts on this tool's past performance, and on the several ways it has been improved. Ask him.



TYPICAL FIELD REPORTS

Kansas: Operator ran anchor in an attempt to cut down tubing leaks (seven leaks in previous three months). In the twelve-month period following installation of a Baker Compensating Tubing Anchor he has had only two tubing leaks and has increased pump efficiency by approximately 45%.

Texas: Operator had run twenty-five Baker Compensating Tubing Anchors and was very pleased with results. As a test, he released the Baker anchor in a well that was making 140 barrels per day. After release (tubing string unanchored) he reported that production fell off to 75 barrels per day. After resetting anchor, production went back to 140 barrels per day.

Eastern Colorado: Operator has run 40 Baker Compensating Anchors. Had not previously used anchors. Ran anchors to reduce frequency of tubing jobs to replace rod-cut tubing. Reported that he had eliminated rod-cut tubing, increased pump life 100% and production 14%.

BAKER BAKER

BAKER OIL TOOLS, INC. HOUSTON • LOS ANGELES • NEW YORK

southeast corner of the county, where there is crude transportation leading to both the Los Angeles and Texas Gulf Coast refining districts.

Crude from Lisbon is now being purchased by Pure, trucked to Aneth, and then sent to Texas. Output is averaging around 1,600 b/d, from only three wells. Other completions in the field are shut in.

The main line of Pacific Northwest Pipeline Corp. passes only a few miles southwest of the field, providing a ready outlet for any future gas production.

Pure disputes the contention of Belco and Pubco that Lisbon has an active water drive. The latter two companies, however, told PETROLEUM WEEK that institution of water drive might be an answer to conservation of subsurface pressures.

Pubco's Gorham says there is a possibility that carbon dioxide, contained in gas from upper Mississippian formations, could be used in a future miscible waterflood.

And some engineers seem to tend toward institution of both gas-recycling and later waterflood.

Tool Eases Cement-Off of Water Strata

A "releasing sleeve" designed to ease the cementing off of water-bearing strata above and below oil-bearing sands is the newest approach to oil well cementing in California.

The sleeve is the invention of R. O. (Tiny) Chancellor, a Bakersfield (Calif.) oil man with 44 years' experience in the oil fields, most of it in drilling, and his son, Forrest, an electrical contractor specializing in oil field work.

The device is designed for cementing casing when it is desired to produce two or three oil zones—separated by water-bearing strata—through one string of tubing.

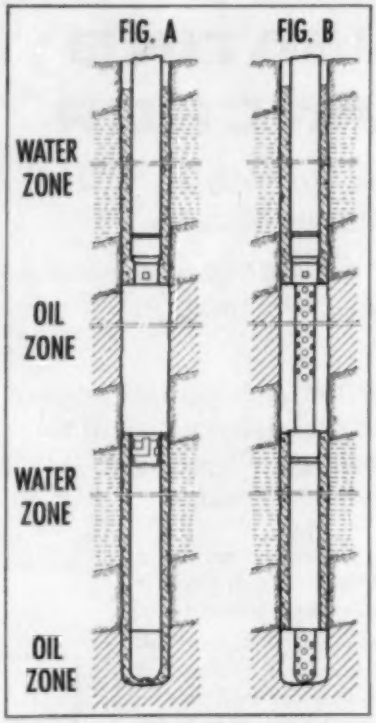
Field tests by a major oil company in Cymric field, Kern County, indicated that the sleeve offers a cheaper, quicker, and more effective solution than the previous method of completion in the field.

The operator had run a string of 8⅝-in. casing swedged down to a 6⅛-in. sleeve to be positioned opposite the upper of two oil zones during cementing. The lower zone was left open below the shoe of the casing. Casing was cemented to the surface. Then the operator milled out the sleeve, reamed out cement opposite the upper zone, and ran liner to complete.

Since October, eight releasing sleeves have been run by the same operator in the field, where the average test goes to 1,200 ft. to produce an average 20 b/d of 12-gravity oil. In each case, wells were completed from two oil zones separated by intermediate water. Thickness of the upper zone, which normally would have required a sleeve and subsequent milling out, varied from 30 ft. to 200 ft.

Releasing sleeves are credited with saving the cost of the 6⅛-in. sleeves (about $3.50 a ft.) and the cost of milling them out, a job that required an average of one hour per ft. milled out, and sometimes cost more than $4,000—most of the cost representing rig time.

The releasing sleeves also are credited with keeping cement off the upper oil zone, thus removing potential impediments to oil migration into the well bore. And there was no milling, with its attendant risk of loosening the stub separating the upper and lower oil zones sufficiently to permit water entry.



THE 'RELEASING SLEEVE' is used first in cementing lower casing string. It is released, pulled up, and used in cementing upper string (Fig. A). Liner is run, and the well is completed (Fig. B).

The sleeves are expected to pay or come close to paying their own running costs, leaving substantial savings to the operator in rig time.

While cost figures for the releasing sleeves are not regarded as definitive because of the experimental nature of the work, that's the estimated savings in 6⅛-in. sleeves alone—particularly if a fair-sized sleeve would have been necessary.

In testing at Cymric, one 1,200-ft. test was drilled and completed on the pump, with a 100-ft. upper zone open, in less time (less than four days) than it previously took to mill out the same length section in an identical well.

The device also appears to have additional applications in completion of gas wells and in cementing joints of casing in drilling to permit testing when packers fail to seat against the formation.

It is believed that the releasing sleeve will make it possible to complete a gas well without having to cement across an upper zone. This enables the operator to avoid the risk of impending gas flow from the upper zone. It would also enable him to choose perforation sizes in advance, since the liner could be set through all zones.

When packers fail to set due to formation conditions, a releasing sleeve could be used to cement a joint of casing at the point where the test was desired. A casing packer could then be used in getting the formation test, and the diameter of the hole would not be restricted for further drilling.

The releasing sleeve is, in effect, a tubular connection that may be released from the surface—by rotating the drill string—making it possible to cement a lower string of casing, disengage, pull up the upper string, and cement it in place.

There are two models of the sleeve. The first, 2 ft. long, is for use when the string of pipe is not rotated during cementing. The second, 3 ft. long, is for use when the operator feels it is necessary to rotate the string of pipe while cementing.

The 2-ft. model is assembled as follows:

Lugs (on the upper section) spaced 180 degrees from each other are introduced into windows at the same spacing on the lower section. The

windows have a 1-in. clearance over the 2-in. lugs. After the raceway is reached, the top section is rotated 120 degrees to the left, butting against a stop. A shear pin is inserted in the raceway, and the tool is ready to be run.

In this model, O-rings are used for seals, with an O-ring in the bottom section sealing off pump pressures and an O-ring in the upper section providing an auxiliary pressure seal and also a restriction against entry of foreign matter between the two sections of the releasing sleeve.

The 3-ft. model also has O-rings for pressure seals. It differs from the first model in that the lower section has a rotating window, closed on top to contain the lugs in position. When weight is supported by the lower section of the releasing sleeve, the lugs are free to rotate within the rotating window, and the casing may be rotated either to the right or left.

Release is accomplished by setting down to relieve weight from the bottom section of the sleeve, causing the top section to move down so as to position the lugs out of the rotating window into the raceway, where the sleeve may be released by rotating 125 degrees to the right.

Releasing sleeves used at Cymric were all 8⅝-in. outside diameter, and 8-in. inside diameter, to correspond with casing.

Sizes can be varied depending on size of casing, and it is anticipated that the sleeves could be as small as 4-in. for use in deep wells.

At Cymric it was found possible to disconnect while in the hole, then tie back on with pipe still in the hole.

Though the sleeves were used only for two-zone completions, it is believed it would be possible to cement off three water zones, leaving two sections of open hole by using a 2-ft. sleeve on the bottom water zone and a 3-ft. sleeve at the top water zone.

Here's how the sleeves were run at Cymric:

The operator ran the assembled sleeve on a string of casing, calculated depth at which cement was desired for the first cementing job, ran cement, released the sleeve by rotating the casing string, pulled up a short-distance (usually 1-ft. or so), cleaned out excess cement by circulating it out with drilling fluid, pulled up to the desired point, and cemented the upper string of casing in place.

A new company has been formed to offer the devices.

Chancellor Oil Tools, Inc., of Bakersfield, will market them under the name of Chancellor Releasing Sleeves.

San Juan Basin Gets Deep Test

Approval of a drilling unit is being sought by Humble Oil & Refining Co. to attempt what may be the deepest test in the San Juan Basin of northwestern New Mexico.

At a hearing in Santa Fe last week, the company outlined plans to drill a 12,500-ft. test to tap either the Mississippian or Pennsylvanian in San Juan County.

According to a spokesman for the New Mexico Oil Conservation Commission, "We regard this as an extremely important test, inasmuch as the Pennsylvanian and the Mississippian are regarded as the most probable sources of deep production in the San Juan Basin, if such is encountered."

New Mexico's Conservation Commission is expected to grant approval within a week, thus clearing the way for the significant venture.

Both the U.S. Commissioner of Public Lands for New Mexico and the U.S. Geological Survey have already given preliminary approval to the formation of the drilling unit. These two groups are expected to grant final approval within a few weeks.

While the unit agreement provides that drilling must begin within six months after the date of the unit agreement, there is some speculation that Humble will start even sooner.

The agreement provides that all oil and gas within the unit will be under unitized operation, regardless of depth of formation.

According to the commission, the agreement "also provides that within six months after the effective date of the unit agreement, the unit operator [Humble] shall commence drilling a well on the unit area and continue drilling such well until the Mississippian Madison formation has been tested, or until paying quantities of hydrocarbons have been discovered at a lesser depth, provided however, that in no event will the unit operator be required to drill in excess of 12,500 ft."

Privately, sources close to the development say they feel Humble might go ahead with the venture without complete agreement among other operators holding leases within the proposed unit area.

"The company could start drilling any time after approval is granted," a commission source explained. "It doesn't have to wait until all the leaseholders sign on the dotted line. I wouldn't be surprised to see drilling start as early as January."

The bulk of the proposed unit area is federally owned, and the remainder is state land.

The area comprises 11,478.48 acres, of which 9,878.48 acres are U.S.-held, and the remaining 1,600 acres are owned by New Mexico. There is no privately owned land in the proposed unit.

The unit area is contained entirely within township 30n, range 14w (map).

Humble, the largest acreageholder in the proposed unit area, with some 65% of the total, will spot its first test 5 to 6 mi. northwest of Farmington.

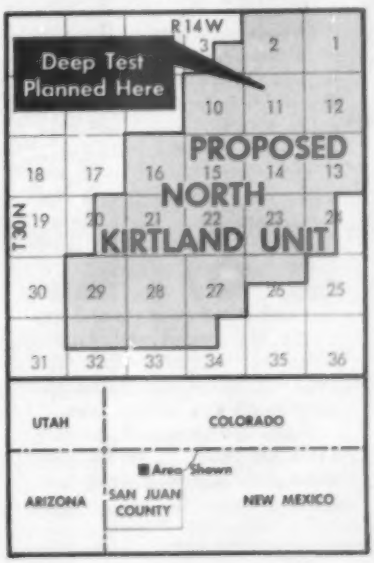
The proposed venture will be drilled in section 11.

In addition to Humble, considerable acreage is also owned by Pan American Petroleum Corp., Pubco Petroleum Corp., Aztec Oil & Gas Co., Texaco Inc., Southern Union Gas Co., El Paso Natural Gas Co., and others.

There is no production in the proposed unit currently.

The commission says, however, that there are some Dakota formation wells offsetting the proposed unit area. This formation runs from a few feet beneath the surface to around 6,000 ft.

A commission spokesman adds: "To date there is only minor production from these formations [Pennsylvanian and Mississippian], and what little there is comes from around the edges of the basin, where the formations are shallow."



Computer Analysis of Well Logs Is Pushed by Petroleum Industry

The petroleum industry is moving forward on a unified program to determine whether computers can be used to analyze well logs.

Latest move in this direction was the recent meeting in Houston of a special American Petroleum Institute subcommittee.

Composed of representatives of ten major oil companies and five service firms, the API Subcommittee on the Application of Computer Processing to Well Logging & Formation Evaluation has been in the formative stage for nearly two years.

A temporary subcommittee was organized in May and June of 1959 for the purpose of evaluating computer application to well logging. Following evaluation and approval of a tentative plan of action, the permanent subcommittee was organized early this year, and was made responsible to the Steering Committee on Production Practices.

The permanent subcommittee held its first meeting in Dallas in June. The Houston meeting, in late November, followed, and a third meeting is scheduled for early February, probably in Tulsa.

These efforts are being spurred by the knowledge that well logs contain much more information than it is possible to read from them visually.

"If we can find a way to digitize this information so that we can feed it into a computer, we think we can come up with far more data," says one member of the subcommittee.

"What's more, it will be much more accurate and precise."

The groundwork has been laid for future joint investigations and dissemination of individually acquired knowledge.

The subgroup, under the chairmanship of Thomas S. Hutchinson, Atlantic Refining Co., appointed four groups to carry out this objective.

These groups are: (1) questionnaire (to sound out top level management on its objectives in well log analysis); (2) hardware (to investigate the various types of digital computers available); (3) format (to determine the parameters by which digital log data can best be presented); and (4) meeting programs (to determine opportune meeting dates and agendas).

The subcommittee members also heard a report at Houston on work being done by the American Standards Assn. aimed at establishing a "universal" computer language, or standardized means of going from one language to another.

Another discussion, conducted by a representative of International Business Machines Corp., concerned the use of digital magnet tape. And a representative of Schlumberger Well Surveying Corp. reported on that company's recently inaugurated service for digital field recording of dipmeter logs on magnet tape (PW—Apr.22'60,p47).

Joint action on digital recording of well logs is just beginning to get off the ground. And work done by individual companies has progressed only slightly further.

In addition to IBM and Schlumberger, Shell Research, Jersey Production Research, Cities Service Oil Co. (Del.), Gulf Oil Corp. (mainly through its Venezuelan subsidiary), and Continental Research are known to have active projects under way.

Added to these are efforts being put forth by the Birdwell division of Seismograph Service Corp., and by Century Geophysical Corp.

Research also is being conducted at the University of Illinois.

Vladimir S. Tuman, of the Dept. of Petroleum Engineering, heads the university study.

Tuman, aided by Dorothy Bollman, a graduate student at the university, reported on the application of computers to the interpretation of well logs at the recent symposium on formation evaluation held in Houston.

Tuman reported that available digital computers can be used effectively for such work by digitizing well-log data, preparing programs to process the data, and analyzing and evaluating the results.

The Illinois professor noted that the cost of digitization presently is greater than the cost of processing the same data by a computer. Further work is needed, he added, to reduce the cost of digitization, else it will be "an economical bottleneck to the automatic processing of well logs."

Despite the various efforts, however, there are many hurdles to clear.

One highly placed industry source reports that Schlumberger alone now has in the field a workable means of direct digital recording on magnetic tape, and that even this is applicable only to the dip log at present.

Century Geophysical offers a simultaneous analog and digital (punched tape) recording of its Acoustic Log (PW—Apr.22'60,p48), and Birdwell, among others, offers a Log Digitizing Service which, by manual operation, transcribes data from conventional electric logs to digital form.

Says a research company official: "We have contacted virtually every electronics manufacturer in the country in search of an instrument capable of automatically and mechanically transcribing conventional log data to magnetic tape. So far, none have indicated that they can do the job.

Unified efforts in the next few months, at least, will be concentrated on field methods of obtaining digital records on magnetic tape.

The research company spokesman adds that transcription of existing records will be a secondary consideration of the API subcommittee.

He explains: "At the moment, we are not so much concerned with the past as with the future. Existing logs, we believe, can be transcribed at any time after a rapid method is devised. Now we are concerned with getting a workable method in the field."

In the two subcommittee meetings held so far, discussions have centered on generalities, and on orientation of members.

At the planned February meeting, however, it's believed that an attempt will be made to correlate practical approaches to field recording on magnetic tape.

Oregon Denies Shell's Offshore Bid

Oregon's Attorney General has killed—temporarily, at least—Shell Oil Co.'s bid for exclusive rights to drill for oil on the entire 600,000 acres of offshore land owned by the state.

The official, Robert Y. Thornton, ruled last week that the State Land Board has no power to grant exclusive rights, and added that specific legislation is required before there can be any authorization of oil and gas leases on submerged lands. Thornton suggested that the 1961 legislature clarify the applicable oil and mining laws.

Shell had proposed to pay $150,000 yearly in rental, plus one-eighth royalty on any production.

What's New / IN EXPLORATION, DRILLING, PRODUCTION

New Mexico Prorates Dakota Gas Production

New Mexico's Oil & Gas conservation Commission has ordered prorationing of gas produced from the Dakota formation in the San Juan Basin beginning next Feb. 1. Aim: To hold excess supply to market demand.

A formula based on acreage and deliverability has been set up to determine individual well production. The system will apply through a three-month period, after which a hearing will be held to determine which fixed allowables should be assigned.

The commission rule also established 320-acre drilling and spacing units for Dakota development in the basin. The Dakota has become the main target of exploration for new gas reserves in northwest New Mexico.

The commission has lumped all Dakota gas production in Rio Arriba and San Juan Counties into the newly created "Basin-Dakota" pool. All previously named Dakota gas pools, excepting Barker and Ute Dome, were abolished and included in the new Basin-Dakota designation.

•

Pan Am to Acquire Big Canadian Acreage

Pan American Petroleum Corp. may soon hold interests in continuous blocks of oil and gas rights in Alberta that are comparable in size to the country of Switzerland: 5-million acres.

Pan American will drill two tests to earn an interest in the 1,270,000-acre Caribou Mountain project of Dynamic Petroleum Products, Ltd. Added to its other holdings, this block will bring Pan Am's interests up to the 5-million acre figure, the largest continuous block of oil and gas rights ever assembled in Alberta.

The area is in north-central Alberta, adjoining the Wood Buffalo National Park.

•

Oil Recovery Corp. is making its patented secondary recovery Orco Processes available for license.

The Orco Processes comprise treatment of reservoirs with controlled amounts of carbon dioxide. The basic Orco Process is an improved method of waterflooding (PW—Jun.24'60, p59).

•

A Fort Worth independent has paid the Navajos $500 an acre for 640 acres of undeveloped lands in the Greater Aneth area of San Juan County, Utah.

W. A. Moncrief made the purchase direct from the tribe, which reserved sizable overrides, varying from one tract to another. In addition, a provision for a 25% net reversionary interest to the tribe following payout on drilling is a part of the agreement. Eight tests are planned for the acreage. In 11 cases, the tracts are offset in one or more directions by producing wells.

•

The Soviets are planning to go forward with production of plastic turbodrill components to cut high costs and inadequacies of their steel turbines.

The Soviet newspaper Komsomolskaya Pravda reports that turbines made of plastic have been successfully tested in oilfields of Bashkiria and Tataria. The paper noted that failures of steel turbines have been so frequent that 1.5-million turbine phases are produced annually for spare-part use only. Production of these cast-steel parts, the paper adds, "is an expensive and complicated process."

•

The Bureau of Land Management is resuming issuance of noncompetitive oil and gas leases.

Such leasing has been temporarily suspended since Sept. 2, pending completion of new regulations resulting from changes in the Mineral Leasing Act, passed in the last session of Congress.

A notice, signed by Interior Secretary Fred Seaton, will permit the bureau to issue noncompetitive leases if lease applicants agree to abide by new rental rates and other changes in regulations.

•

The Alberta Oil & Gas Conservation Board flashed the green light for

This Football Helps Oil Production

Footballs are in year-round "play" at Humble Oil & Refining Co.'s Mattoon (Ill.) oilfield waterflood project. L. P. Lowery, shown inserting a football in an injection pump, found use of the football an effective answer to a vibration problem. The pump packs a heavy wallop as it forces water into the oil-bearing zone. The resultant vibrations threatened to break welded flow lines and tank connections. The football, held in a steel jacket on one side of the pump, flexes with the pump pulsations, thus absorbing the sharp kick of water under pressure.

unitization of the Harmattan-Elkton field, and a gas conservation program went into effect immediately.

Canadian Superior Oil Co. of California is operator of the unit, which is 50 mi. northwest of Calgary. Gas produced along with oil in the field is now being injected into the reservoir. It was previously flared.

There are 21 working interest owners and eight royalty owners of the field.

•

The Alberta Oil & Gas Conservation Board is placing heavier emphasis on current average well productivity in dealing with maximum permissive rates of production for oil wells.

In a notice to operators, the board said, in part:

"There are a significant number of pools in which the average well could not produce at the subsisting MPR for more than two or three years. The board now believes that only the current average well productivity need be considered as a ceiling on the calculated MPR. Where productivity considerations do control, MPR's would be successively reduced in the future as the productivity declined.

The board has therefore decided to adopt a productivity requirement such that the MPR for a well in a pool shall not be greater than 80% of the estimated current productivity of an average well in the pool . . . However, the board is prepared to give further consideration to the matter if there appears to be dissatisfaction among the operators."

•

U.S. Oil Co. of Louisiana, Inc., a wholly owned subsidiary of John W. Mecom, Houston independent, has begun drilling its proposed 26,000-ft. test in Lake Washington field, La.

The steam rig being used is the same one used in drilling the Richardson & Bass No. 1-L Humble LL&E, which set a new depth record when it was completed at 22,750 ft.

•

Engineering

Two insert valves, installed in casing couplings between pin ends of made-up joints, provide an "economical" substitute for conventional floating and fill-up collars in cementing programs with moderate-depth requirements.

The valves, which combine the convenience and dependability of proved primary cementing equipment with a newly engineered seal that improves insert performance, are now available from Baker Oil Tools, Inc.

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Drilling Highlights

Mississippi—Humble Oil & Refining Co. No. 1 May-Love, section 1-4n-7e, Pike County, tested 185 b/d of oil through ⅛-in. choke and perforations at 10,828-68 ft. in the Tuscaloosa. The wildcat was bottomed at 11,121 ft. by Williams, Bohen, Thornhill & Alford, with Humble taking over to test and complete. The prospect is 3 mi. northeast of Summit field and 5 mi. west of Little Creek field.

West Texas—Thomas C. Brown No. 1 H. T. Sapp, section 6, H. T. Sapp survey, Crane County, was completed as a Devonian discovery for 264 b/d of 45.4-gravity oil through perforations at 6,120-25 ft. The well is just west of Permian production in Cra e-Cowden field, with nearest Devonian production 5 mi. west in Dawson field.

Utah—Aztec Oil & Gas Co. No. 1-58 Navajo, section 7-41s-23e, San Juan County, flowed 63 bbl. of oil on 3½-hour test through open 2-in. tubing and perforations within the interval 5,592-700 ft. in the Pennsylvanian. Originally classified as an outpost to Gothic Mesa field, 1½ mi. northwest, the well is now reported by the operator to be on a separate structure somewhat higher than that at Gothic Mesa.

West Central Texas—Wright, Clark & Senkel, Inc., No. 7-B W. E. Powers, G. W. York survey, Stephens County, flowed 360 b/d of 41-gravity oil through 14/64-in. choke and perforations at 4,442-52 ft. in the Mississippian. The well also was completed for small production from a 4,100-ft. Pennsylvanian conglomerate section, which will be prorated county regular. The well is 1½ mi. southeast of Mississippian production.

Wyoming—Sunray Mid-Continent Oil Co. No. 1-C Federal, section 13-35n-88w, Natrona County, recovered gas at a rate exceeding 900,000 cf/d on drillstem test of the Lance (Cretaceous) at 4,456-520 ft. The prospect is the iniital test on the proposed Defender Reservoir unit, 6 mi. northeast of Raderville field.

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How American Industry Points The Way To Sustained Prosperity in 1961

Something new and very constructive is happening in American industry. It promises to add a major element of strength to business not only in 1961 but right along over the years ahead.

What is happening is essentially this. **American industry is planning to continue to invest heavily in new and better producing facilities in spite of the fact that it has an excess of capacity to produce its present range of products. And, by doing so, business is helping to shape a stronger American economy.** For the continuation of a high level of capital investment by business is one of the most important keys to sustained prosperity.

News of this major new development in American industry is provided by the results of the McGraw-Hill Fall Survey of Business Investment Plans for 1961 and 1962, presented in detail at the right. The McGraw-Hill investment surveys, now in their 13th year, cover a broad cross-section of American industry.

How American industry is aiming to go ahead with a big investment program in spite of its present burden of excess producing capacity is highlighted by the plans of manufacturing companies. The McGraw-Hill fall survey finds that, on the average, these companies are using slightly less than 80 per cent of their producing capacity. They would like to be using well over 90 per cent.

Dramatic New Departure

If historic investment patterns were being followed, our manufacturing companies, with only about 80 per cent of their capacity being employed, would be cutting back new investment programs drastically, and cutting down prosperity in the process. **But — and here is the dramatic new fact — they plan almost no cut-backs in their investment programs.** They plan to invest almost as much (within 3%) in 1961 as they are investing this year. And this year they are investing 19 per cent more than they did in 1959.

There are two major reasons why American industry is unwilling to let its excess producing capacity stall its investment in new facilities until the capacity is more fully used. One is that a lot of this capacity is obsolete and costly to operate. Increasingly rugged competition is creating a strong inducement to replace this antique capacity with modern, more efficient equipment which is widely available.

PLANS FOR CAPITAL SPENDING
(Billions of Dollars)

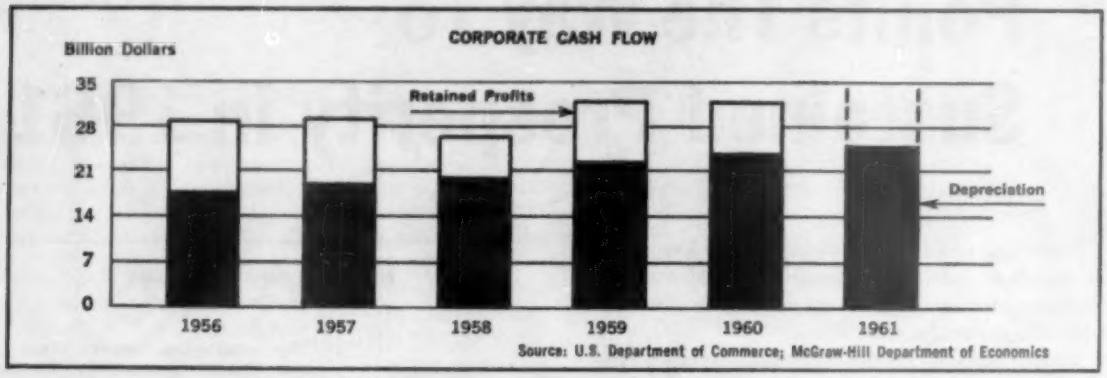
INDUSTRY	1959 Actual*	1960 Estimated*	1961 Planned	1960-1961 % Change	1962 Planned
Iron and Steel	$1.04	$1.52	$1.37	—10%	$1.18
Nonferrous Metals	.31	.34	.34	0	.32
Machinery	.91	1.15	1.11	— 3	1.11
Electrical Machinery	.52	.62	.68	+10	.63
Autos, Trucks & Parts	.84	.89	.95	+ 7	1.02
Transportation Equipment (Aircraft, Ships, R.R. Eq'pt.)	.39	.41	.37	—10	.35
Other Metalworking	.88	.97	.85	—12	.87
Chemicals	1.24	1.61	1.64	+ 2	1.59
Paper and Pulp	.63	.75	.69	— 8	.53
Rubber	.19	.24	.23	— 4	.20
Stone, Clay and Glass	.53	.63	.56	—11	.55
Petroleum & Coal Products	2.49	2.45	2.52	+ 3	2.50
Food and Beverages	.82	.94	.99	+ 5	.97
Textiles	.41	.53	.42	—21	.40
Miscellaneous Manufacturing	1.07	1.28	1.21	— 5	1.13
ALL MANUFACTURING	12.07	14.33	13.93	— 3	13.35
Mining	.99	.99	.90	— 9	.89
Railroads	.92	1.04	.79	—24	.83
Other Transportation & Communications	4.69	5.20	4.61	—11	4.18
Electric And Gas Utilities	5.97	5.99	6.14	+ 4	6.01
Commercial (1)	8.21	8.61	8.70	+ 1	8.54
ALL BUSINESS	32.55	36.06	35.07	— 3	33.80

*U.S. Department of Commerce, Securities and Exchange Commission, McGraw-Hill Department of Economics.

(1) Figure based on large chain, mail order and department stores, insurance companies, banks and other commercial businesses.

"R And D" Paves The Way

The steel industry provides a good case in point. Despite an operating rate of little more than 50 per cent during the last six months, steel companies plan a total investment of nearly $1.4 billion in 1961. And though this is 10 per cent below their capital expenditures in 1960, it will still be the third highest year on record.



Also, new investment is required to tool up for the manufacture of the new products being spawned by the continuing boom in industrial research and development. This year, we are spending about $13 billion (that's *billion*) for all research and development, about $9.6 billion of it through industry.* And out of it is coming the "know-how" for a veritable flood of new products, processes and equipment, most all of these calling for new producing equipment. Next year, American manufacturers plan to get 12 per cent of their sales in products that did not even exist four years ago.

Key Role Of Depreciation Reserves

A major reason why American industry can combine the desire to carry out big new investment programs with the necessary financial capacity to do it is to be found in the growth of its reserves for depreciation. This year, (1960), business has been in a squeeze between costs and the prices it could get for its products. This cost-price squeeze has reduced profits sharply. The total of profits for the year will be down about 5 per cent.

Allowances for the depreciation of existing plant and equipment, however, have continued to rise. The result is that the so-called cash flow of corporations (their retained profits plus their allowances for depreciation) is the same this year as last. And this cash flow, shown in the chart above, makes a decisive contribution to financing new investment.

Inflation Would Be Deadly

If the sort of profit squeeze that has prevailed this year were to become chronic, it would blight both the incentive and wherewithal to continue a vigorous program of new investment. In addition, if price inflation were to begin surging again, it would eat away the power of depreciation reserves to purchase new plant and equipment.

The allowances now permitted American industrial firms for the depreciation of their producing facilities are lower than those made in any of the industrial countries with which we are in increasingly tough competition. More adequate allowances would speed up the job of modernizing American industry. An earlier McGraw-Hill survey indicated that it would cost only slightly less than $100 billion to bring our nation's plant and equipment up to date.

But at this juncture, American industry's eagerness and capacity to maintain a high level of investment capital is adding a great new element of constructive strength to the nation's economy.

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*The significance of this boom for American industry is analyzed in a new McGraw-Hill book, "The Research Revolution" by Leonard Silk, Economics Editor of BUSINESS WEEK. Together with other new business investment trends the "R & D" boom also constitutes a key part of another new McGraw-Hill book, "New Forces in American Business" by Dexter M. Keezer and associates — the November selection of the Business Book Club.

This message was prepared by my staff associates as part of our company-wide effort to report on major new developments in American business and industry. Permission is freely extended to newspapers, groups or individuals to quote or reprint all or part of the text.

Donald C. McGraw

PRESIDENT

McGRAW-HILL PUBLISHING COMPANY

Use of Contract Maintenance Spreads

An era of entirely new relationship between refinery labor and management may result from the increasing popularity of contract maintenance.

The favorable attitude of both processing companies and labor unions toward contract maintenance is due primarily to the manner in which project agreements for such maintenance are negotiated: They are prepared in terms that both sides find to their advantage, and do not jeopardize anyone's interests.

Contract maintenance is the arrangement under which management obtains the service of independent construction firms and their skilled workers to handle all or any part of the task of maintaining facilities and keeping them in operating order.

Contract construction has been practiced in the U.S. for many years. Contract maintenance, therefore, is not a recent innovation. But its application under its present form started only after World War II, when Catalytic Construction Co. was formed, initially to handle the maintenance of Tidewater Oil Co.'s Delaware City refinery.

Contract maintenance is very different from a "labor broker" type of arrangement, CCC points out. Actually, the labor broker is only a hiring agency. It does not provide a trained supervisory staff familiar with the job, and feels no responsibility for any labor difficulty that may arise as a result of its services.

The novelty of today's contract maintenance is the practice whereby various building trades unions coordinate their efforts at the international level, and sign a joint collective bargaining agreement with the maintenance contractor.

Contract maintenance is negotiated and administered by the unions' General Presidents' Committee.

This committee, is made up of the top-ranking officials of the AFL-CIO international building trades unions—13 at present.

They meet monthly with the maintenance contractors to discuss problems arising on the job, and make sure that both sides understand and comply with the contract terms. Thus local unions in the plant areas are bypassed.

The attractive feature of such an agreement is that, although locally prevailing wage rates are paid, major concessions are offered to the contracting companies—and to their clients, the processors.

Some of these concessions:

- The agreement recognizes the need for mixed, or composite, crews, "a condition very difficult to obtain in construction work," E. D. Hoekstra, executive secretary of the National Constructors Assn., told PETROLEUM WEEK.
- Travel expenses, travel time, or subsistence while traveling are not required, in order to remain competitive with in-plant practice.
- Double-time pay for overtime, prevalent in construction, is waived in favor of time-and-a-half.
- Reasonable arrangements are made for long periods of shift work, comparable to in-plant operations.
- The agreement may be made either with a single maintenance contractor or with a group of contractors in a joint venture.

Contract maintenance has many advantages for the processor. The most significant is that labor peak loads can be met without having to carry standby crews between major maintenance jobs. Among its other advantages:

- It can provide the temporary additional manpower required for starting up new units.
- Serious problems of employee morale and public relations in the community are avoided by eliminating layoffs of local people.
- It places the company in the position of a buyer of a service, and the contractor in the position of a seller: The contractor must perform satisfactorily if he is to continue to have the business.
- Contractors and building trades craftsmen are geared in attitude, organization, and training to complete the work quickly.

Alan T. Knight, CCC president, cites the case of the turnaround of Tidewater's 102,000 b/d fluid cat cracker, earlier this year. The job was started five days after his company had been notified. Five more major units—besides the cat cracker—were taken off the line during the turnaround.

The entire refinery was back in normal operation 24 days later. During that time, the labor force rose from 181 men per day to a peak of 924. It was back to 181 within a week after the units were back on stream.

As a comparison, the recent turnaround of the cat cracker at a major company's Pacific Coast refinery took 38 days and required 150,000 manhours—an average of 500 men per day if they had been evenly distributed during the turnaround. Here, considerable modernization was done during the turnaround. But all the personnel that took part in the work had to be reassigned as effectively as possible throughout the refinery once the work was completed.

Other savings that result from contract maintenance: The tools and the equipment required for maintenance work are supplied by the contractor, and no use need be made of the plant's machine shop.

The maintenance contractor brings the necessary tools to the job at a low rental rate, because he can use these tools at least ten months of the year. The refiner or processor can keep a minimum store of frequently used tools and equipment.

By the very nature of his business, the maintenance contractor keeps good tools in top condition. He also makes contacts with machine shops throughout the area—say within 25 mi.—and obtains good terms for any machine work that needs to be done.

Another advantage of contract maintenance is that the company knows what its maintenance cost is, promptly and regularly.

The contractor adds up the payroll each payday, adds his overhead and fee, and arrives at the sum that represents the total maintenance cost for the week.

"Our experience with companies that maintain their own forces," says Knight, "has been that the maintenance supervisor is fortunate when he is able to get accurate maintenance costs within a month or 45 days. Thus, contract maintenance is of great help when the supervisor is working on a close budget."

Contract maintenance is being applied to many new plants; but it can also be of value in existing plants.

The easiest way to apply contract maintenance is naturally in a new plant.

The second easiest case is where the facilities are being expanded, and additional maintenance personnel would otherwise be hired. The third way, the most difficult from a union standpoint, CCC says, is to bring in contractor's men as attrition takes place

in a company's fixed maintenance crew.

CCC is currently performing contract maintenance for Tidewater, Sun Oil Co., British American Oil Co., Ltd., American Cyanamid Co., Ethyl Corp., and the chemical divisions of both Goodyear Tire & Rubber Co. and Firestone Tire & Rubber Co., as well as for cement manufacturers, and several aircraft and missile companies. Phillips Chemical Co. has selected CCC to perform complete maintenance services on its new 60-million-lb.-per-year carbon black plant, now nearing completion, near Orange, Tex.

An effective agency for the promotion of contract maintenance is the Construction Industry Joint Conference, composed of the international building trades unions and the national construction contractor associations. CIJC provides a continuous forum for the discussion and settlement of problems confronting management and labor in the building and construction industry.

One of its affiliates is the National Constructors Assn., composed exclusively of nationally known industrial engineering design and construction firms.

Chlorination Improves Butyl Rubber

Two new kinds of butyl rubber—chlorinated butyl rubber and butyl latex—will soon be put on the market by Enjay Chemical Co., the petrochemical division of Humble Oil & Refining Co.

Commercial availability of these two new products will be announced separately. Enjay will supply customers with an appropriate manual for each.

The two products have now completed their market-development stage, Enjay says, and have been manufactured on a commercial scale for several months.

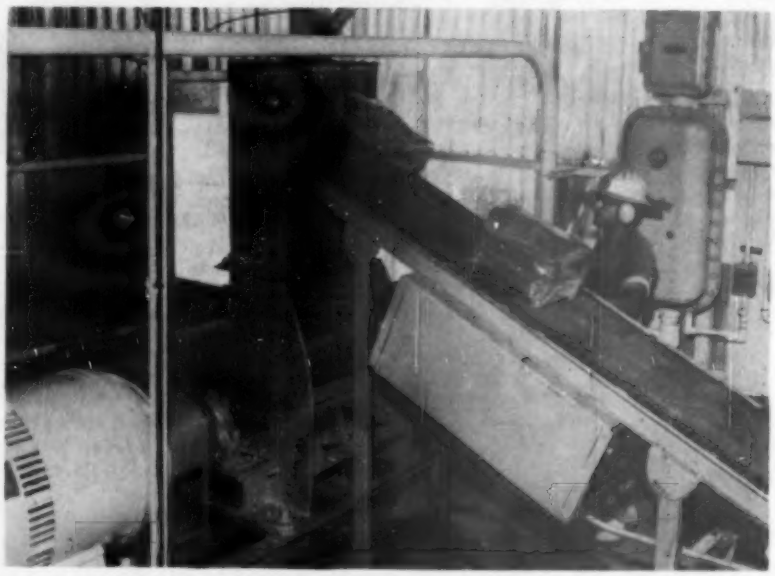
Chlorinated butyl rubber, properly vulcanized, is exceptionally stable under heat and can be covulcanized with most other elastomers, according to Enjay.

The use of halogenation to give certain qualities to elastomers is not new. Before synthetic rubbers became popular during World War II, natural rubber was being chlorinated to make it more resistant to chemical action.

The desirable properties of chlorinated butyl rubber are obtained by adding a controlled quantity of chlorine—1.1% to 1.3%. When the polymerization of conventional butyl rubber is completed, a certain amount of still-unsaturated diolefin bonds remains in the product. In the chlorination process, the chlorine atoms are attached to these bonds, which causes rapid cross-linking in the polymer molecule during the curing (or vulcanization) process.

As a result, Enjay says, chlorinated butyl rubber retains all the qualities of the all-hydrocarbon butyl rubber, and acquires certain additional properties. For example:

- It can be mixed and vulcanized with other elastomers, such as reclaimed rubber, SBR, neoprene, and nitrile rubber.
- It has adherence qualities which the nonchlorinated butyl rubber lacks. Thus, it can be used to make white sidewalls and impermeable inner linings for tires.



BUTYL RUBBER is fed to shredder at Esso Research & Engineering Co.'s Baton Rouge pilot plant, to be converted into halogenated butyl rubber and butyl latex.

- Rapid curing of the chlorinated butyl rubber can be performed with many agents, and without any complications.

The conventional types of carbon black, mineral fillers, resins, and oil can be mixed with the chlorinated butyl rubber, and the same improvements are obtained as with conventional nonchlorinated butyl rubber. Among these are better stability, greater strength, better heat aging, and greater scorch delay during the cure.

The second new product, butyl latex, is a chemically and mechanically stable emulsion of butyl rubber, containing about 55% of solids.

One of the characteristics of this latex, Enjay told PETROLEUM WEEK this week, is the absence of inert solid emulsifying agents, which are frequently used in latex.

This is possible, Enjay says, because of a special technique of emulsification it had to develop for the preparation of the butyl latex. Such a technique is required because, when isobutylene and isoprene are reacted to make butyl rubber at low temperature, they do not pass through a transient latex state; the process is a mass rather than an emulsion polymerization system.

The advantage of butyl latex is that it offers, for the first time in latex form, the qualities of butyl rubber, Enjay says. Among these qualities:

- It has exceptional weathering resistance. This makes it particularly useful for roof coatings.
- It has a good shelf life, because of its good freeze-thaw stability.
- It covulcanizes readily, not only with butyl rubber, but with most other elastomers.
- It can be compounded with a great variety of pigments, fillers, thickeners, and tackifiers.
- The vulcanizates have the resistance to aging and weathering, and

the low permeability to gases and moisture, that are characteristic of butyl rubber.

Butyl latex is expected to find applications in a great variety of industries.

One of its first applications, Enjay says, was for the impregnation of cords in the manufacture of all-butyl tires, preferably with resorcinol and formaldehyde.

A promising application is in the paper industry, as a desirable component in coatings. For this application, butyl latex offers high resistance to natural fats and oils and water, and good pigment bond strength, plus satisfactory printability, brightness, and gloss.

Its ability to disperse solid colors well makes it potentially useful for colored rubber master-batch.

It will no doubt find applications in roof coatings, in the textile industry, and as a bond agent for nonwoven fabrics.

Sulfamic Acid Cuts Descaling Cost

Refiners may be able to save considerable money when removing scale from their equipment, by using inhibited sulfamic acid instead of inhibited hydrochloric acid.

The saving may amount to more than 1¢ per sq. ft. of surface cleaned.

A two-year evaluation was recently completed at the California refinery of a major oil company. It demonstrated that, although sulfamic costs much more per pound than hydrochloric acid, the quantity required per sq. ft. of surface to be cleaned is substantially less.

A comparison between two identical eight-months periods showed that 12,000 lb. of sulfamic acid were used to clean 118,707 sq. ft., against 51,328 lb. of hydrochloric acid to descale 66,276 sq. ft. Thus the average cost of acid needed for cleaning 1 sq. ft. of equipment was 2.09¢ for sulfamic acid, versus 3.13¢ for hydrochloric acid.

Another advantage derives from the relative safety of sulfamic acid.

It is a white, nonhygroscopic, nonvolatile, granular solid. When dissolved in water, it forms highly ionized solutions, which approach the strength of hydrochloric, sulfuric, or nitric acid. When inhibited, it is safe to handle, does not fume, and is less corrosive to metals than other mineral acids. It can be carried in solid form to the top of the equipment to be cleaned, and mixed with water there to make an acid solution of the required strength—1 to 2 lb. per gal.

A further advantage of sulfamic acid is that residual solutions can safely be stored for regeneration and further use.

This cannot be done with hydrochloric acid, which must be discarded because regenerated solutions become much too corrosive to be re-used.

Sulfamic acid was first produced on an industrial scale in 1940 by E. I. du Pont de Nemours & Co. Its use for cleaning and descaling of industrial equipment has grown rapidly in the past two years, Du Pont says.

Sulfamic acid is particularly suited for use on stainless steel, where hydrochloric acid is usually excluded due to concern over stress corrosion cracking and pitting of welded areas.

What's New / IN PROCESSING

A new gas plant to be built at Sun Oil Co.'s Marcus Hook (Pa.) refinery, is part of a $9.3-million program for consolidating gas processing facilities there.

Feed stock for the plant will consist of liquids and mixed gases from various catalytic cracking plants at the refinery.

When the plant is completed in November, 1961, Sun will shut down two older ones built before World War II.

It will have an initial daily capacity to separate 14.4-million cu.ft. of dry gas, 7,100 bbl. of liquefied propane and propylene, 13,200 bbl. of liquefied butane, and 18,000 bbl. of gasoline.

Products will be gasoline blending stock, fuel gas, alkylation and polymerization charge, and feed to the propylene splitter.

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Synthetic rubber is expected to capture a still-larger share of the total rubber market in 1961, reaching 71% in the United States, and more than 37% in the rest of the free world, according to J. S. Keener, president of B. F. Goodrich Co.

Total rubber consumption in the United States will be around 1,555,000 long tons in 1961, about the same as in 1960, Keener reported in a year-end statement of the company's activities, and will be about 1,800,000 long tons in other countries in the free world, an increase of 3% over 1960.

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Another process for desalting water to make sea water and brackish water potable is being developed by Koppers Co., under agreement with the U.S. Office of Saline Water. It is based on the formation of salt-free propane hydrate crystals.

The process, carried out at temperatures between 32F and 45F, is very similar to the butane freezing process (PW—Dec.16'60,p37), but in this case, propane hydrate is successively formed and decomposed, instead of ice.

W. Knox, of Koppers, told the recent meeting of the American Institute of Chemical Engineers, in Washington, that the power required for this process is about 28% lower than the power required in the process that uses butane as a refrigerant.

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New facilities for the manufacture of Amoco Chemical Corp.'s Panarez hydrocarbon resins will be built at Texas City, Tex., adjacent to an American Oil Co. refinery. The resins are manufactured from refinery byproduct streams.

The new plant is expected to double Amoco Chemical's hydrocarbon resin capacity. It will go on stream sometime in 1961.

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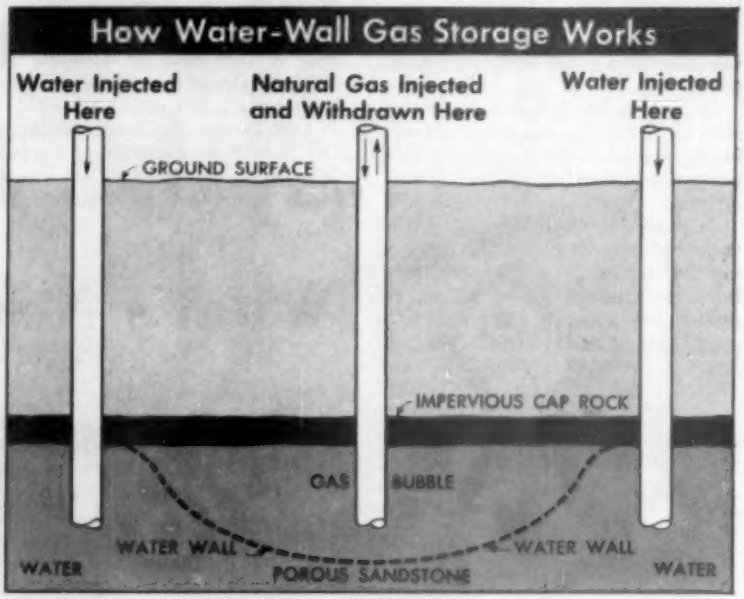
One price of several aromatics will increase substantially early in January, due to the heavy demand for these products. Naphthalene, phthalic anhydride, and toluene are affected.

The price of naphthalene is scheduled to rise by ¼¢ to 1¢ per lb., bringing it to 6.25¢ to 7¢, depending on origin and grade. Phthalic anhydride will be 20¢ per lb. in carload lots, a 1¢ rise. Toluene has been 25¢ a lb. delivered; most producers will now charge 25¢ a lb. f.o.b. factory.

NORTHERN ILLINOIS GAS engineers work out bugs in storing gas as bubble in water.



Can Gas Be Stored Under Flat Caprock?

A project aimed at solving the problems involved in storing natural gas underground under water pressure beneath flat caprock, instead of beneath scarcer dome-shaped formations, is under way in the Chicago area.

Large quantities of gas are now stored underground in water-bearing sandstone formations under domes of impermeable caprock in various parts of the country. Perhaps the best known gas-storage aquifer of this type is Herscher Dome, of Peoples Gas Light & Coke Co., at Herscher, Ill., 70 mi. southwest of Chicago (PW—Sep.4'59,p48).

Success of the revolutionary experiment, which is being conducted by Northern Illinois Gas Co., could open the way to far greater underground storage of gas near markets, because of the wider prevalence of flat caprock formations.

Site of the project is Matteson, Ill., 12 mi. south of Chicago, within the 10,000-sq.mi. area in which Northern Illinois distributes gas to 705,000 customers.

The uitilty has a conventional aquifer at Troy Grove, Ill., where it stores 100-million cu.ft. of gas.

The gas would be stored under the flat caprock by containing it in a bubble in water, which is being intermittently pumped into the sandstone.

The method is known as "water-wall storage," and is reported never to have been tried before.

The principles involved in the method would also be applicable to an aquifer having one open side, with the difference that fewer water-injection wells would be needed.

Northern Illinois started pumping water in last spring through eight injection wells at a rate of 20 to 30 gal. a minute. It has now halted work for the winter; injection of water through the 5-in.-diameter wells will resume when the weather warms.

There was some water in the sandstone before injection started, and it is not known at this time how much will have to be added. Water being pumped in is drawn from a shallow-water well located 300 ft. below ground surface.

The 140-ft.-thick St. Peter sandstone formation lies below a 200-ft.-thick Platteville limestone formation, which is 1,000 ft. below the surface.

The eight injection wells are situated around the rim of a circle, 1,700 ft. in diameter. Five other wells have been drilled and equipped with instruments to measure the pressure of the gas and water in the sandstone. Four of these wells are situated within the circle, and one just outside.

Northern Illinois ran into a problem involving chemical reaction between the water and sandstone, which delayed the project somewhat, but which is now believed to have been solved. The water contains iron and iron-bearing bacteria, and the sandstone contains a high concentration of sulfur and surfur-bearing bacteria; when the two mixed, they produced iron suphite, which clogged the injection wells, preventing proper flow of water down into the sandstone.

Bradford Laboratories and Bradford Supply Co., of Robinson, Ill., were consulted, and they devised a treatment whereby chlorine is first added to the water to form iron chloride, a precipitate, which is filtered out. While Northern Illinois feels that this method solves the problem, it will not know conclusively whether it does until water injection is resumed.

Before attempting to inject natural gas into the water-bearing sandstone, Northern Illinois will pump air in to determine whether it can be contained in a bubble by the water.

Air (and, later, gas) will be injected by two 400-hp. compressors until its pressure and the water pressure are equal. By varying the air pressure, Northern Illinois says, it will be possible to control the size of the bubble. The gas will be retained in storage under pressure, and will be withdrawn as needed simply by opening a valve.

Pressure of the water in the sandstone before injection began was about 240 psi. By the addition of water, this

pressure will be increased by 50 to 100 psi.

Northern Illinois reportedly plans to use a chemical to create a wall around the outside of the reservoir by sealing the sandstone. Precisely what substance and methods will be used haven't been disclosed.

Gas-storage capacity of the completed aquifer is to be 80-million cu. ft. If it works according to plan, there is a strong possibility that Northern Illinois will develop similar storage reservoirs under flat caprock at other locations in its market area.

Development of inexpensive storage of its own is viewed by the utility as a way of offsetting rising costs as gas demand climbs.

It estimates that the costs of pipeline facilities to provide enough capacity for gas to meet its peak-shaving needs alone would be around $200-million.

Thus far, cost of development of this first water-wall storage reservoir has amounted to $200,000; it is not expected to exceed $500,000.

While the aquifer would not be big enough to store all the gas the company will require to meet peak-day demands, it would provide relatively cheap storage for a substantial part of the amount.

At present, Northern Illinois must rent underground storage space for 210-million cu.ft. of gas, in addition to the 100-million cu.ft. it stores in its own conventional underground reservoir and 50-million it keeps in above-ground tanks.

By adding propane to its natural gas in a one-to-four ratio, the company says, it can boost its supplies by another 70-million cf/d.

All this gas is available to the company in addition to 619.5-million cf/d it takes from pipeline companies to supply normal customer needs.

Total quantity of gas thus available to the company this winter is 1,049,500,000 cf/d—64.5-million cf/d more than is expected to be required on a peak winter day.

And Northern Illinois predicts that its deliveries will expand at the rate of 5.5% a year in the future, which will sharpen its need for cheap self-owned storage close to markets.

What's New / IN PIPELINES, TANKERS, STORAGE

NLRB Jurisdiction Still in Dispute

Two of the unions leading a drive to organize crews on American-owned, foreign-flag ships have asked the National Labor Relations Board to reject a Justice Dept. view that it lacks jurisdiction over such vessels.

Four cases involving efforts to organize seamen on these ships were pending before NLRB when the Justice Dept. last month issued its opinion in behalf of the State and Defense Depts. (PW—Dec.2'60,p46).

The National Maritime Union and the Seafarers International Union now want NLRB to reopen oral arguments in the four cases.

Oral arguments were first held on May 31. The request for a second argument is expected to be denied.

NMU says that if NLRB refuses to assert jurisdiction, it has "resort to picket-line procedures as sanctioned by the courts."

The Justice Dept. had argued that foreign registry is an economic necessity, and that ships flying the flags of Panama, Honduras, and Liberia are under the U.S. government's "effective control."

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El Paso Gas Supply Co., a new subsidiary of El Paso Natural Gas Co., has asked FPC approval to build a $29.6-million pipeline to deliver up to 210-million cf/d of gas to its parent company.

The 227-mi., 30-in. line would extend from Live Oak County, Tex., to El Paso Natural's Sonora plant, in Sutton County, Tex.

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Texas Eastern Transmission Corp. and Buckeye Pipe Line Co., which have just completed a link between their systems, have set tariffs to ship normal butane from Texas to two points in Ohio.

From the origin of TET's pipeline at Mt. Belvieu, tariff to Lima will be 65¢ per bbl., and tariff to Toledo will be 68¢ per bbl.

The new link runs from the eastern terminus of TET's forked LPG line at Lebanon, Ohio, to Lima, where it connects with Buckeye's system, which serves four Midwest states (PW—Nov.18'60,p98).

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Oil men and the American Waterways Operators, Inc., are backing a proposal to widen and deepen the Sabine-Neches waterway, in Texas, to permit full loading of 30,000-ton tankers. The plan calls for deepening the waterway from 36 ft. to 40 ft., and widening it to a uniform 500 ft. Bottom width now ranges from 350 ft. to 450 ft.

Under present conditions, refiners using the waterway say 30,000-ton tankers—a popular size in the area—cannot load fully.

The waterway consists of that section of the Sabine River which runs from Orange to Sabine Lake, and that portion of the Neches River which runs from Beaumont to the lake. Both rivers flow into what is called the Sabine-Neches Ship channel, which ultimately empties into the Gulf.

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Several oil companies operating in Alberta have backed a plan of Hudson's Bay Oil & Gas Co., Ltd., to build a 41-mi. pipeline there as the most feasible means of gathering LP-gas for export to the U.S.

Their support was given in letters to the Alberta Oil & Gas Conservation Board, which has just wound up hearings on the plan—one of several to gather LPG for export.

Among companies favoring the Hudson's Bay line are Shell of Canada, Mobil of Canada, and California Standard.

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Engineering

Fully automatic roll-welding of pipe is now said to be possible with a new process developed by Hobart Bros. Co., Troy, Ohio.

Hobart says its technique eliminates the need for manually welding a stringer bead or backing ring on the first pass.

In the Hobart system, carbon dioxide is used to shield the welding zone from atmospheric contamination as the stringer bead is automatically laid on with microwave welding equipment.

Iran's NIOC Cuts Own Export Role

Iran's National Iranian Oil Co. disclosed last week that its role as a direct oil exporter for its own account was reduced last year.

In its annual report for 1959, released in Teheran, NIOC showed its direct income from its own exports down 39%, from some 50.3-million rials in 1958, to 30.7-million rials, or $414,990, in 1959.

NIOC said it exported a total of 358,250 bbl. of crude in 1959.

The oil was made available to NIOC by the international consortium members, as part of the 12½% "Stated Payments" provided for in their operating agreement with Iran in the southern oil producing area.

Iran's total oil exports were up 12½% in 1959 to 303,397,101 bbl., NIOC said in its report on the industry.

Of the total, which includes stocks on hand, trading companies of the consortium exported 212,643,081 bbl. as crude, and 90,395,770 bbl. as products from the Abadan refinery.

Iran retained its position as sixth among world oil producers, with net production up to 12.4% to more than 340.2-million bbl.

This total included a slight increase, to 1,917,960 bbl., in NIOC's own production at its Naft-i-Shah field, outside the consoritum's operating area.

In an introduction to the report, NIOC chairman Abdollah Entezam said "satisfactory" results were obtained in discussions with the consortium members on steps "to increase exports and to maintain a balance between Iranian oil exports and those of other oil producing countries of the Middle East."

On the home front, NIOC increased its domestic sales of products a record 19.9%, to nearly 21,420,000 bbl.

This was the highest annual rate of increase in domestic demand to date, reflecting rapid progress in Iran's economy and living standards, NIOC said. In part, also, its increased sales were due to extension of its distribution system.

Iran's income from oil exported by the international consortium members was up 6.1%, to $262,486,000, NIOC reported.

Of this, $189,640,256 was paid by the consortium members as income tax, and $72,846,225 as "Stated Payments."

Of this total, NIOC was allotted 9.09%, while 49.53% went to Iran's Plan Organization and 41.38% to the Ministry of Finance. In the future, the report said, NIOC's share will be a fixed amount, in accordance with a 1959 budget law.

In all, the consortium companies brought in 53.3% of the total foreign currency received by Iran—including loans and credits.

The total from operations in the consortium area was $339,808,482, including $77,322,000 brought in for conversion into rials for local expenditures.

"From this," NIOC said, "it is clear what an important role income from oil plays in the country's economic development."

In NIOC's own operations, discovery of a "vast reservoir" of oil and gas at Sarajeh, in central Iran, was the highlight of the year, according to Entezam.

Two wells were drilled in the area, 87 mi. from Teheran.

Reserves were estimated at about 2.5-trillion cu. ft. of gas and 240-million bbl. 9¢ light and heavy crude, NIOC's report said. Present productive capacity is estimated at 2,800 b/d of light oil and 1.4-billion cf/d of gas, with prospects of a considerable in-

Mobil Gets Lake Maracaibo Stake

Mobil of Venezuela is set for its first exploration and development in Lake Maracaibo—on nearly 10-million acres it takes over from Creole under a new farmout pact (PW—Dec.16'60,p14).

The agreement covers a 9,706,088-acre T-shaped tract, roughly 18 mi. from the eastern lakeshore (map). It is part of Creole's undeveloped "old" holdings in the lake, and is bordered in part by tracts Venezuela granted in 1956-57 to Superior, Mene Grande, and the Signal-Pure-Sohio group.

At present, the acreage has three capped productive wells, previously drilled by Creole along the eastern edge, bordering an "old" Shell block.

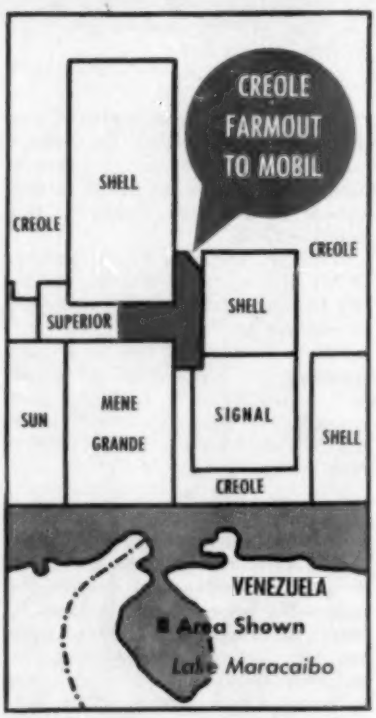
Productive capacity of wells in surrounding acreage ranges between 2,000 b/d and 5,000 b/d.

Mobil plans to drill both wildcats and development wells on the tract, but has not finalized its program.

Mobil will finance development of the tract and retain 75% of the oil it produces there. The deal will extend through the remaining term of Creole's rights in the acreage.

The farmout is part of the much broader Creole-Mobil crude sales pact announced last week.

Under this, Mobil will buy a total of 112.5-million bbl. of Creole's crude over 22½ years. It also has an option to buy another 100-million bbl. during



the same period. In sum, the pact means a sizable boost in Mobil's Venezuelan crude resources, which at present are confined to its own 122,000 b/d production in Barinas and eastern Venezuela.

crease when additional wells are drilled.

NIOC, in fact, accounted for 62% of the total exploratory footage drilled in Iran last year.

The over-all total was 159,769 ft., including development and maintenance drilling. Of 59,991 ft. drilled in search for new resources, NIOC accounted for 37,215 ft. and the consortium 10,644 ft. The Italians and Pan American International accounted for the balance.

The consortium found oil at Binak —its first coastal wildcat—which, NIOC reported, can produce 4,000 b/d of crude according to preliminary tests.

NIOC also disclosed that it acquired its first stake in the equipment business, following a proposal from De Long Corp., New York City, designers and builders of offshore drilling platforms.

A new company known as Gulf Marine Co., Ltd., was founded, in which NIOC owns 25% of the shares. Object of the company, NIOC said, is to supply various types of marine drilling and loading platforms.

Oil Victory Won, Frondizi Declares

BUENOS AIRES—"Argentina will be self-sufficient in gasoline, fuel oil, and natural gas early in 1961"—a year ahead of schedule—Argentine President Arturo Frondizi announced last week.

Frondizi declared in a radio-television message marking Petroleum Day that his administration has won the first round in the "battle for petroleum." He gave few statistics in his hour-long talk, however.

To emphasize his point, Frondizi reported that imports of oil were reduced 42.5% during 1960.

The president added that the nation's success was also confirmed by news from Yacimientos Petroliferos Fiscales (YPF), the state oil agency, that Argentina is now producing almost as much as it is consuming.

Surplus of gasoline and fuel oil early next year will even permit Argentina to export these products, Frondizi said.

Success in achieving partial self-sufficiency is only qualified, however, since it is measured in the context of restrictions on oil consumption, Frondizi added.

Thus, the job now is to lift present restrictions and reduce prices—particularly of gasoline and natural gas.

Ceylon Moves In On Oil Business

Ceylon, like India, is taking steps to import oil and market for its own account through a new state oil company.

A charter for the government firm is now under preparation. A bill has been submitted to Parliament under which the company would be set up with initial capital of $2.1-million, with its income tax-exempt.

The initial aim of the government is to supply its own departmental oil needs, but the firm will also be set to compete with the established marketers—Shell, British Petroleum, Caltex, and Stanvac (whose Ceylon interests will soon be taken over by Esso).

With one or two exceptions, all government departments have already been instructed to make no further contracts with these companies.

The state company will import products from the Russians—and also from new Western suppliers, the government has indicated.

The Soviet Union has reportedly offered oil at prices 20% off current c.i.f. prices in Ceylon, and a firm agreement is expected to be signed shortly.

Among Western newcomers mentioned as potential suppliers are Getty Oil, American Independent Oil, and an Italian company.

At the same time, the government has made it clear that it doesn't want to discontinue purchases of products it is getting at substantial discounts from the majors there.

It is not clear yet whether a privately owned local company recently formed to import Russian products may now be dissolved.

This company, called Ceylon Petroleum Co., had recently announced conclusion of an agreement of its own with the Russians (PW—Nov.4'60,p 10).

Its former head has already been picked by the government as manager of the projected state company.

The government is also laying the legal groundwork to take over any installations it wants for the state company.

The bill now in Parliament provides that payment for such properties would be determined by a "compensation tribunal."

The government recently asked Shell to resell to it a half-dozen surplus storage tanks Shell had purchased from the British Admiralty—and at the same price. Shell has been balking.

A state refinery to be built with Russian aid is again being mentioned.

Thus, there are increasing prospects that a long-standing refinery proposal made jointly by the established majors may be shelved for good.

Perez Oil Property View Disputed

CARACAS—Did Mene Grande actually own an abandoned terminal when it donated it to a Venezuelan government bank last summer? The question has a deeper significance than appears on the surface.

Mene Grande, an affiliate of Gulf Oil Corp., turned over its former Las Piedras terminal to the government Workers Bank in August, after it transferred its Lake Maracaibo crude-loading operations to Puerto Miranda.

Venezuela's Oil Minister sees the transfer as a precedent establishing the principal that nearly all oil property reverts to the state without indemnification.

The minister, Juan Perez Alfonzo, claims that both the Venezuelan Constitution and the oil law provide for revision of oil property when it ceases to be used for oil industry development purposes. Refineries, however, are under separate concessions and are exempt from such provisions, he says.

The principal applies even when—as in the Mene Grande case—the concession on which the installation stands has not expired or been relinquished, according to the Oil Minister.

Thus, when the Mene Grande terminal ceased to be used for oil purposes, it automatically reverted to the state, according to Perez.

Perez is not opposing the right of the Workers Bank to hold the property. He is, instead, interpreting the legal route by which it was transferred.

But C. W. Perry, president of Mene Grande, insists that his company did not renounce any concession that could be considered to have any relation to the property.

Perry also argues that acceptance of the donation by the government bank implies recognition of Mene Grande's ownership and right to dispose of it as it pleased.

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What's New / AROUND THE WORLD

RHODESIA—American Independent Oil Co. is among the U.S. interests who last week were given another month on their joint option to present a firm refinery plan to the federal government (PW—Sep.30'60,p34).

The option had been granted to R. S. Steinbock, of Summit, N.J. for a group of U.S. newcomers—under the proviso that participation be offered to the established marketers.

Shell has already formally turned down the offer. It announced in Salisbury last week that it hopes to present its own local refining plan jointly with British Petroleum. This won't be considered, however, unless the American option is allowed to lapse next Jan. 31.

•

AUSTRALIA—Indiana Standard is reported eyeing Australian refining plans for Queensland as the latest in its foreign expansion moves.

A company spokesman in Chicago last week declined comment on this persisting report. He did, however, deny a particular report that Indiana may join Ampol Petroleum, independent Australian marketer, in that company's proposal to build a refinery at Port Alma. Ampol has an option on a site there for what would be Queensland's first refinery.

•

WEST GERMANY—The Soviet Union is bargaining for a near-tripling of West Germany's imports of Russion oil, in a new three-year trade pact now under negotiation.

Under the present three-year pact, expiring this month, West Germany had agreed to buy 4½-million tons (about 30,000 b/d) of Russian oil. The Russians are said to be demanding a boost to 12-million tons (about 80,000 b/d) for the next three years—or they will refuse to buy about $80-million worth of steel pipe from the Germans.

•

ARGENTINA—Shell has started exploratory drilling in Buenos Aires province on new contract acreage it was granted two years ago. Its first wildcat there, No. 1 Los Gauchos, was spudded last week 3 mi. south of the capital. The company has previously drilled three tests on other new acreage, in Rio Negro province.

NIGERIA—Mobil was getting ready last week to spud its third Nigerian test.

The site chosen for the No. 1 Illepaw wildcat is 45 mi. west of Lagos, in the southwestern corner of Nigeria, 3 mi. from the Dahomey Republic border.

Mobil drilled a stratigraphic test last year, and recently abandoned a wildcat 12 mi. west of Lagos (PW—Dec.16'60,p44).

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TRINIDAD—Pan American International may be appearing in Trinidad exploration soon as one of the latest of its foreign moves. It has already incorporated Pan American Trinidad Oil Co. in Delaware, but isn't giving any indication of its plans yet.

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AUSTRALIA—A Dallas firm, Overland Industries, Inc., has been granted a 3.2-million-acre oil concession in the Murray River Basin, in New South Wales.

Preliminary exploration is expected to begin by the end of this month.

•

JAPAN—The Japanese who hold Neutral Zone offshore oil rights have applied for government approval to form a Kuwaiti-Japanese trading company—apparently as a means of partially implementing Arabian Oil Co.'s concession obligations for integrated international operations.

Kuwaiti interests connected with Kuwait Oil Tanker Co. would own 51% of the trading company. The 49% Japanese share would be taken by a tanker company headed by Arabian Oil's president, Taro Yamashita.

•

VENEZUELA—Oil output dipped another 77,000 b/d in November, with the year's gain slipping further to 3.1%, from a high of 3.9% at the end of September. The official government figures, in 000 b/d:

Company*	Nov. '60	11-Mos. Avg. '60	11-Mos. Avg. '59
Creole	1,014.4	1,096.3	1,108.8
Shell	732.3	754.5	822.2
Mene Grande	400.7	400.3	365.6
Mobil	104.6	122.0	112.4
Sun	90.7	80.9	40.9
Richmond	64.6	64.6	50.7
Texaco	59.0	56.4	55.6
Sinclair	53.8	50.6	46.2
Phillips	49.8	54.4	26.9
Superior	42.1	39.8	16.1
San Jacinto	36.3	38.9	33.7
Atlantic	28.4	27.2	25.8
Signal	23.7	26.2	24.5
Mercedes	15.9	16.5	31.8
Caracas	8.6	9.1	—
Coro	7.7	8.4	—
Talon	1.1	1.1	1.3
Continental	—	0.1	—
Totals	2,733.7	2,847.3	2,762.5

**For joint ventures, total group production is listed under operator's name.*

U.S. Newcomer to Turkey Plans Test

TURKEY—Pauley Petroleum, Los Angeles independent new to the Turkish oil search, is considering plans to drill a wildcat here next year.

Pauley's first Turkish test will probably be on a 30,000-acre tract just acquired a few weeks ago from the Turkish government.

The acreage is in the Iskenderun Basin along the Mediterranean Sea in south-central Turkey, relatively close to Mobil's discovery, Bulgurdag.

The firm joined the Turkish oil search last May, acquiring more than 700,000-acres under three licenses.

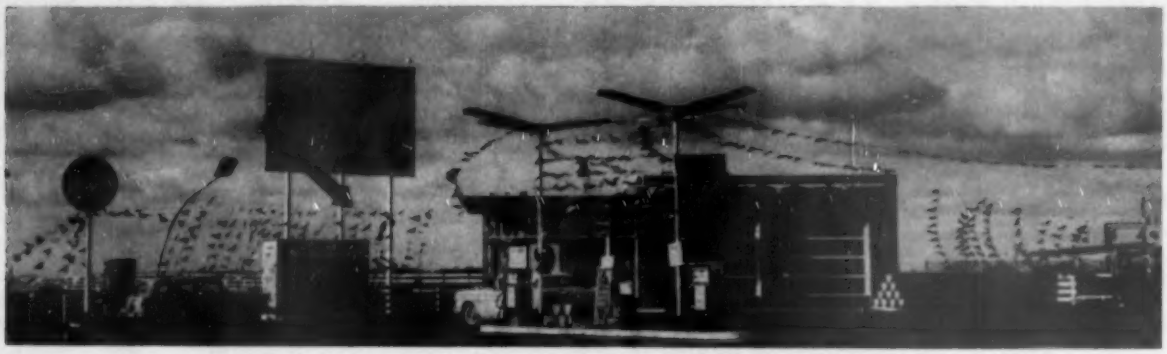
The licenses issued in May covered another tract in the Iskenderun area, about 90% of it offshore; acreage near Antalya, also on the Mediterranean, and acreage northeast of Ankara.

These three licenses were the remainder of those originally held by Ralph M. Parsons Co., of Los Angeles.

Parsons had previously assigned some of its permits to Gulf Oil Corp.

While Pauley worked through Parsons to acquire the acreage, the licenses, when finally issued, were new ones, which gave Pauley six full years of exploration rights.

THIS LOW-PRICE STATION, located near Wilmington, Del., is really an experimental laboratory, Sun Oil says. But the station . . .



PROVOKED THIS ANSWER from Tidewater Oil Co. Both stations market nine grades of gasoline, and they show how . . .

Tidewater Imitates Sun in Delaware

Sun Oil Co. has taken what may prove to be a major step in the marketing of multigrade gasoline: It has opened a private brand outlet near Wilmington, Del., and fitted it with nine-grade blending pumps.

This is the first time that Sun has departed from its six-grade program, which has been in effect ever since the company introduced multigrade marketing several years ago.

In its move to nine grades, Sun appears to have acknowledged the step taken by independent marketers who have introduced multigrade marketing to the West. Signal Oil & Gas Corp. and Pauley Petroleum Co., for example, have both introduced nine grades.

An important feature of Sun's Delaware station is the low price at which its lowest grade of gasoline is pegged.

This price is currently 26.9¢ per gal., substantially lower than major-brand prices in the area. The other eight grades range in one-cent steps up to 34.9¢ per gal. As if to call attention to these steps, Sun has named the station "Cent-A-Grade."

Sun calls the station a "sales laboratory" designed to test new ideas in marketing multigrade gasoline.

Only gasoline and motor oil are sold at the station, which is company-operated. And even though the station is equipped with lubrication bays, it offers no services beyond the cleaning of windshields. (The lube bays are now used to store motor oil.)

The atmosphere of the station is similar to most private-brand outlets. On opening day, an attendant waved at passing motorists with balloons, and gave away a box of pretzels to any motorists who stopped to buy gasoline.

After the opening, the Sun station settled down to a high-volume, 24-hour operation, apparently profiting from its low-price pump signs.

Sun's low-price structure has irked Tidewater Oil Co., which competes with Sun in the Wilmington market.

Tidewater operates a station that is located just 200 yards south of the Cent-A-Grade outlet on the heavily traveled Du Pont highway near New Castle County airport.

When Sun converted its station to a private-brand operation, and dropped its price below prevailing major-brand levels, Tidewater felt compelled to counter the move.

To compete against Sun, Tidewater has opened its own private-brand station, and is offering nine grades of gasoline.

In effect, this is the first indication that Tidewater has accepted the idea of marketing multigrade gasolines. The company, however, disclaims any significance in the move. The multigrade equipment belongs to the lessee dealer who operates the station, and does not represent any Tidewater innovation, the company says.

The lessee who operates the station under the "Stop-and-Save" brand is no ordinary dealer, however. He is a former area salesman for Tidewater, who "took advantage of the opportunity to go into business for himself," the company says, "when he learned of the decision regarding this location."

This former area salesman now claims that his station has no connection with Tidewater. But other Tidewater dealers in the area feel differ-

ently. They are disturbed by the fact they must compete against a Tidewater dealer—regardless of what he calls himself—who sells gasoline at a price lower than they can meet.

These developments in Delaware may have broad significance for both Sun and Tidewater.

Sun claims it is just out to test consumer acceptance for nine grades of gasoline. But it may also learn something about the success a major-brand marketer can find in opening private-brand stations.

The Stop-and-Save station, although just a counter-measure, may give Tidewater some experience in multigrade marketing that would be difficult to ignore.

Pure Oil Opens a "Big One"

In a move to increase its market share, Pure Oil Co. has embarked upon "a major experiment in the Southeast:" It is opening new super-sized stations, surrounded by several conventional outlets.

The project is called "Operation Big One," and is reminiscent of the super station experiment started by Standard Oil Co. (Ind.) last year (PW—Oct.9'59,p15).

There is one essential difference, however: Whereas Indiana Standard closed several conventional stations in a community to concentrate on one large outlet, Pure Oil is apparently not closing any stations.

The big stations are intended to augment the consumer appeal of the conventional stations.

"These big ones," the company says, "can project Pure's public image, product benefits, prestige, and outstanding service capacities to the other Pure stations in the immediate vicinity, with a resultant increase in business for all stations."

Pure can control the public image generated by its big station because it is operating the outlet through salaried management. The company explains, however, that its reason for using this type of management is that "it must assume financial responsibility" for the experiment.

Pure's first "big" station, billed as a "service city," is located in Greensboro, N. C., in an established Pure market.

As might be expected, it features many innovations that have tended to become standard at experimental stations. Chief among these is an expanded customer lounge and sales area. Another standard experimental feature at the station is complete air conditioning. The Esso Standard division of Humble Oil & Refining Co. has been testing the benefits of this feature in certain of its East Coast outlets.

Pure is apparently stepping into line with those marketers who feel their dealers need more work space, at experimental stations at least. At the "service city," Pure has laid out a manager's private office, an attendants' locker room, and flexible warehousing facilities. The station (which boasts of three bays) is designed for additional bays that may be added to meet future demands.

AN EXPERIMENTAL PYLON announces implementation of a new concept.

To add a special touch to the exterior of the station, Pure has turned to a revolving identification sign, which is pivoted atop an elaborate pylon.

An illuminated panel in the pylon permits the dealer to "telegraph" sales messages to passing motorists. This is a feature that Continental Oil Co. has used at a new location in Houston (PW—Aug.7'59,p44).

The opening of Pure's "Operation Big One," follows the company's introduction last year of an all-aluminum service station.

The station, the first of its kind in the industry, is located near Cleveland, Ohio. At present, Pure is completing a second all-aluminum outlet near Chicago.

Both these stations are viewed as experiments in station design and construction.

What's New
IN MARKETING

Ohio Oil Co. announced last week that it will shortly acquire all of the stock of Ross Oil Corp., one of the largest gasoline and fuel and jobbers in Ohio.

The acquisition will give Ohio Oil its first subsidiary with an established marketing organization in the metropolitan Akron area.

Ross distributes through 87 service stations, about two-thirds of which are in the greater Akron area, and an 800,000-gal. bulk plant at Akron.

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Service stations are "actually losing ground rather than making inroads on that two-thirds of the new-tire business now enjoyed by their competitors," said J. L. Lenker, vice-president of Gulf Oil Corp., at the Oil Industry TBA Group meeting last week in St. Louis.

"This is occurring moreover," Lenker went on to say, "in an expanding market."

For most oil companies, 70% to 75% of their TBA volume is being sold by only 25% to 30% of their dealers, Lenker observed.

Why aren't the majority of dealers selling their share? Lenker offered these explanations:

- They lack the needed aggressiveness.
- Because of tight profit margins, many jobbers and dealers have allowed their TBA inventories to dwindle, and have cut back on advertising and merchandising.
- Many dealers are frightened at the prospect of asking prices that are apparently not competitive with cash-and-carry outlets.
- The sales aggressiveness of these competitors is increasing.

•

Shell Oil Co. has joined the growing list of major marketers who are using computers to automate their paper work.

With the new Monrobot XI general purpose computer (made by Monroe Calculating Co.) Shell has developed a method of providing a continuous flow of information on product shipments from storage points to service stations and other customers.

This innovation is expected to eliminate manual processing of most paper work resulting from the physical movement of products in a large number of the company's locations.

ELLIS K. LOCHER moves up to manager of Ethyl Corp.'s newly created Gulf Coast region, with offices in Houston, and **J. O. Balzer** is assistant manager of the new region. Locher was formerly assistant manager of Ethyl's central region, in Chicago, and Balzer was assistant manager of the Mid-Continent region, at Tulsa. Other personnel assigned to the Gulf Coast region include: **W. S. Eskridge**, operations manager; **Donald D. Hornbeck**, chief refinery technologist; and **Kenneth C. Jost**, chief product service engineer. **J. E. Hendrick** and **Douglas P. Jeppe** continue as managers of the Houston and New Orleans districts, respectively. **Norman J. Linstromberg** succeeds Locher as assistant manager of the central region, and **Laurence D. Reis** succeeds Balzer as assistant manager of the Mid-Continent region.

D. T. Koch

E. K. Locher

DONALD T. KOCH has been appointed manager of the new Detroit branch sales office of Cooper-Bessemer Corp., Mt. Vernon, Ohio. The office will serve eastern Michigan and northwestern Ohio areas in the company's east-central sales district. Koch has been located in the east-central sales district since he joined Cooper-Bessemer in 1956 as a sales engineer in the Detroit area.

KING D. BOYD moves from Caracas, Venezuela, to Dallas as export sales representative for United States Steel Corp.'s Oil Well Supply Division. He was formerly associated with United States Steel International, Ltd., S.A. Oilwell has recently moved its export area headquarters from New York City to Dallas.

FRANK CARNAHAN has joined A-Z International Tool Co. as special milling supervisor, with offices at the company's Houston headquarters. He has many years' experience in dealing with fishing and milling problems in the Gulf Coast area. **Jimmy Lisle**, formerly with A-1 Bit & Tool Co., will be in charge of A-Z's Louisiana division, with offices in Lafayette, and **Bobby McDonald**, also a former A-1 Bit & Tool employee, becomes a sales representative for A-Z in Houston.

ATLAS BRADFORD CO. has formed an inspection company in Dusseldorf, Germany, called Universal Engineering Co., Rohrenprufungen und Handelsgesellschaft, mbH. Facilities have been installed in Dusseldorf for complete nondestructive inspection and testing of tubular goods. Equipment will also be available for mill and field inspection of tubular goods. Field service will be available in West Germany, France, Belgium, Italy, and the British Isles. **Hellmut Reichenbacher** will maintain contact with industries in need of tubular goods inspection service, and **L. N. Johnson** will supervise shop and field activity. Johnson has been with Universal Inspection & Service Co., in Houston.

BILLY WAYNE ROGERS is the new south Louisiana district manager for the Pipe Inspectors Division of Plastic Applicators, Inc., with offices in Lafayette. He was formerly a sales representative for the division at Harvey, La. He joined Pipe Inspectors in 1959.

JOHN A. HUFNAGEL has been appointed manager of eastern division sales for Catalytic Construction Co., with offices in New York. He will be responsible for sales on the Atlantic Coast and in eastern Canada. Hufnagel has had over 20 years' experience in design and construction of chemical and petrochemical plants, the last several years being devoted to capital sales. **Leland S. Covey** has been assigned to the New York office as assistant to the manager of eastern division sales. He was formerly located at the company's headquarters in Philadelphia. His assignment will include eastern as well as mid-Atlantic sales responsibility.

J. A. Hufnagel

J. R. Russell

JACK R. RUSSELL has joined Lynes, Inc., Houston, as director of sales and service for domestic and foreign operations. He was formerly northern region manager of Otis Engineering Corp., Dallas. He has been with Otis for the past nine years. Lynes manufactures inflatable oil well packers.

CHARLES J. RUZICK has been named Master Salesman of the Year by Butler Mfg. Co., Kansas City, Mo. Ruzick, recipient of the company's Gold Cup Award, competed with Butler salesmen in all divisions. He is a sales representative in the transportation equipment division. As Master Salesman, Ruzick will also serve as 1961 president of Butler's Cup Club, a sales organization limited to 20 salesmen from all divisions. Ruzick, who is located in Chicago, sells the company's complete line of liquid and dry bulk transporters in the Chicago-Great Lakes area.

W. A. SMITH moves up to industrial service manager of J. I. Case Co., Racine, Wis. Smith, who was most recently acting manager of industrial service, has also served Case as service and education manager, industrial, and as assistant service manager. At the same time, **A. L. Weaver** was appointed export sales manager. He has been with the company nine years, and has served as assistant branch service manager, assistant plant service manager, and regional service manager.

W. A. Smith

J. McMahan

JOHN McMAHAN will supervise George E. Failing Co.'s Gulf Coast district offices at Houston, and its southeastern district offices in Hattiesburg, Miss., which will be operated under one management. McMahan, who joined Failing in 1949 as a member of its headquarters sales staff in Enid, Okla., was most recently manager of its Hattiesburg store. The Failing company is a subsidiary of Westinghouse Air Brake Co., Pittsburgh.

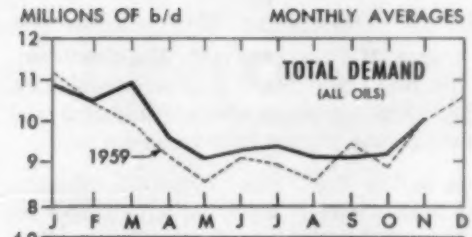
J. J. LAPUTKA has been elected financial vice-president of Air Products, Inc., Allentown, Pa. Laputka, who recently joined Air Products, was formerly financial vice-president of Gorham Mfg. Co.

WILLIAM H. BERNO and **LEONARD E. GILMORE** have been appointed field sales engineers for Texas Instruments Inc. in the Geosciences & Instrumentation division's instrumentation group. Berno will provide additional customer service in Michigan and northern Ohio, from offices in Detroit, and Gilmore will service New England from the company's office in Garden City, L. I., New York. Berno has been an applications and district sales engineer for Jack & Heintz Inc., in Cleveland, for the past five years, and Gilmore has been a sales engineer for General Electric Co.

HUGH L. MORRIS and **GARLAND KENNON** have been appointed to the sales staff of Mission Mfg. Co., Houston. Morris joined Mission in 1959 as a member of its engineering department. Before that, he was associated with Mid-Continent Supply Co. Kennon, a petroleum engineer, was associated with Industrial Nucleonics Corp., Columbus, Ohio, and Ada Oil Co., Houston, before joining Mission.

PETROLEUM WEEK'S

Fingertip Figures



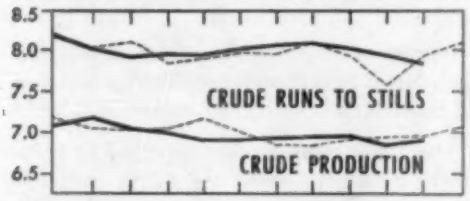
Figures for period ended Dec. 16, except as noted

TOTAL DEMAND

Latest 4-week average	*
Year ago	10.623

DISTILLATE DEMAND

Latest 4-week average	*
Year ago	2.970

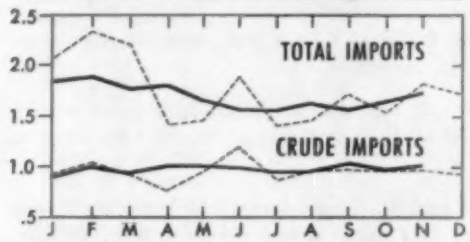


RUNS TO STILLS

Latest week	*
Previous week	7.887
Year ago	8.071

CRUDE PRODUCTION

Latest week	*
Previous week	7.152
Year ago	7.139

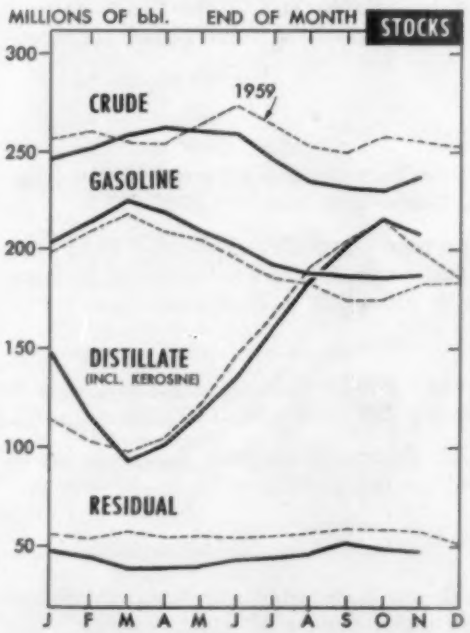


TOTAL IMPORTS

Latest week	*
Previous week	1.942
Year ago	1.776

CRUDE IMPORTS

Latest week	*
Previous week	1.137
Year ago	1.025



CRUDE STOCKS

Week-ended Dec. 10	239.3
Previous week	238.3
Year ago	253.6

GASOLINE

Latest week	*
Previous week	187.1
Year ago	182.8

DISTILLATES

Latest week	*
Previous week	202.4
Year ago	183.4

RESIDUAL

Latest week	*
Previous week	48.8
Year ago	52.5

Natural gas could force oil heat into a phase of decline, warns John G. Winger, vice-president and petroleum economist of the Chase Manhattan Bank.

The rate of growth of oil heat—averaging 3% a year over the past four years—has bogged down to a mere third of what it was in its heyday, the immediate post-World War II years.

Gas is increasing its space-heating market by an amount that exceeds the over-all growth of the market—mainly at the expense of fuel oil.

Relatively few conversions from coal are left to be captured. This was the main area for oil-heat expansion in previous years. Future expansion for gas may come from consumers switching to gas when worn-out oil burners need replacement.

The crux of the matter, according to Winger, is "the peculiar system of allocating joint costs between crude and natural gas at the wellhead," which gives gas a substantial price advantage at the consumer level.

"Residential builders have demonstrated a preference for gas-heat installations if they can be assured that the gas supply will be adequate," says Winger.

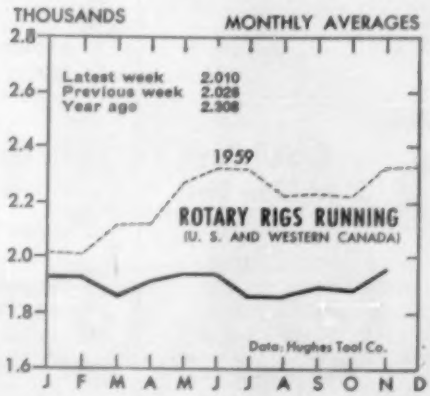
The builders have that assurance, he adds, when the producing segment of the industry makes increasing quantities of gas available in the field.

The outcome of the battle of the fuels hinges on the industry's attitude toward the competitive relationship of oil and gas, the economist reasons.

More heating-oil promotion, and technological progress in the field of oil burner equipment, could change the picture.

* * *

Due to early mailing schedules, most of the figures for the week ended Dec. 16 were unavailable at press time.



The Market Trend

Prices for Heating Oils Start Upward

An upward move in heating oil prices got under way last week. A big assist came from cold weather over most of the nation, and near-record low temperatures for this season in the East.

Price hikes started in the Upper Midwest and the Mid-Continent. Minneapolis-St. Paul quotations for No. 1 and No. 2 fuel advanced 0.5¢, to 11.93¢ and 10.93¢, respectively, f.o.b. terminals there. Oklahoma and Kansas prices followed in amounts ranging from 0.125¢ to 0.5¢.

Then the advances caught on in the East. Esso Standard, effective Dec. 14, increased in most of the area where it markets, with prices up anywhere from 0.2¢ to 1.2¢ a gal. for light fuel oils. Baton Rouge prices were boosted 0.3¢. Plantation Pipe Line points were up 0.2¢ on kerosine and 0.5¢ on diesel oil.

At New York harbor, Esso raised its posted barge prices for distillates by 0.6¢ a gal. Tank wagon prices in the Northeast were advanced generally by 0.8¢.

Prices for contract cargo deliveries of No. 2 fuel to East Coast terminals generally were up 0.5¢ a gal. No. 2 fuel in delivered-cargo lots was quoted at 9.2¢ a gal. at New York, Baltimore, New Haven, and Philadelphia.

And this increase opened the way for a more modest advance at refineries on the Gulf Coast. Independent refineries there are fairly well sold up on light heating oils for the next several months. Asking prices for No. 2 in cargoes were raised from 8.25¢ to 8.5¢ a gal., and some refiners feel that additional increases are in the offing.

In most areas, cold weather has stimulated demand to peak winter levels. Talk of discounts has faded at the Gulf and at many terminals in the Northeast.

On the wavery side, Chicago and St. Louis terminals have been very well stocked, and the cold weather just about saved the day. Also, refiners at the Gulf can't hope to sell spot immediately at 8.5¢, for the 1¢ current freight rate to New York would put the material there higher than contract levels.

Ocean Trip Rates Turn Stronger:

Spot tanker rates for clean Gulf-New York voyages hit a new high for the season last week. The Virginia Trader was fixed at USMC+25%.

Chartering of U.S.-flag tankers has been especially active, with 13 fixtures arranged in the past week. Biggest single fixture was the Sister Katingo, 30,000 tons, for three consecutive trips, Gulf to New York.

Brazil Buys 2-Million Bbl:

Petrobras, Brazil's oil agency, bought 2-million bbl. of crude last week in a continuation of its spot buying policy (PW—Sep.2'60,p40).

The agency bought 1-million bbl. of Arabian crude from Texaco for about $2.15 a bbl., delivered. And 1-million bbl. of Venezuelan crude were purchased from Sun.

Russian Fuel:

A big Japanese independent marketer is reported negotiating with the Russians for 70,000 tons of low-sulfur bunker "C" fuel.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of December 16

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....12.25-13.25
- Gasoline, 92 oct reg....11.25-11.5
- **Kerosine....9.25↑-10**
- **Heating oil, No. 2....8.5↑-9**
- **Gas oil, 48-52, d.i....8.75↑-9**
- Fuel oil, bunker "C"....$2.30

Caribbean, cargoes
- Avgas, Grade 100/130....14.75
- Gasoline, 93 oct research prem....11
- Gasoline, 87 oct research reg....10.125
- Gasoline, 80 oct research....9.375
- Gasoline, 70-72 oct motor method....9.25
- Kerosine....9.25
- Heating oil, No. 2....8.125
- Gas oil, 48-52 d.i....8.375
- Fuel oil, bunker "C"....$2.00

New York Harbor, barges
- **Kerosine....9.8-10.65↑**
- **Heating oil, No. 2....8.8-9.65↑**
- Fuel oil, No. 6....$2.62

Okla.-Group 3, northern shpt., bulk
- Gasoline, 91 oct reg....12.5-13.25
- **Kerosine....11↑-11.125↑**
- **Heating oil, No. 2....9.5↑-9.75**
- Fuel oil, No. 6....$1.80-1.90

Chicago, bulk
- Gasoline, 92 oct reg....12.625
- Heating oil, No. 2....9.75-11.35
- Fuel oil, No. 6 high sulfur....7.65

Los Angeles, rack
- Gasoline, 88 oct reg....11-12.65
- Diesel fuel, PS 200....7.75-11.25
- Light fuel, PS 300....$2.90
- Heavy fuel, PS 400....$2.05-2.45

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....4.5-5
- Propane, Baton Rouge....5.625

Pennsylvania Lubes
- Bright stock, 25 p.t....25
- 200 vis. neutral, 25 p.t....28

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i....26-27
- Neutral, solvent, 200-210 vis....23-24

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i....26
- Neutral, solvent, 200 vis....23

Eastern Hemisphere

Singapore (Pulau Bukom) cargoes
- Avgas, grade 100/130....15.5
- Gasoline, 79 oct research....9.125
- Kerosine....9.625
- Gas oil, 48 d.i. minimum....8.75

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.Kan.), 36.0-36.9....$2.69-2.97
- North Dakota, 36.0-36.9....2.47-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00
  - West Texas, N.M., inter., 36.0-36.9....2.93
  - West Texas, N.M., sour, 32.0-32.9....2.71
  - East Texas, flat....3.05-3.25
  - Mirando, 28.0-28.9....2.96-3.31
- Illinois Basin, flat....3.00-3.05
- Pennsylvania Grade, Bradford dist., flat....4.80
- California, Signal Hill, 21.0-21.9....2.33†
- North Louisiana-Arkansas, 36.0-36.9....2.72-3.02
- Wyoming, sweet, 36.0-36.9....2.85-2.90
- Wyoming, sour, 32.0-32.9....2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.)....$2.38
- Leduc-Woodbend (Alta.)....2.53
- Redwater (Alta.)....2.42
- Steelman A (Sask.)....2.425
- Virden (Man.)....2.285

Venezuela (Cargoes, FOB lifting port designated)
- San Joaquin, 41.0-41.9, Puerto la Cruz....$3.10
- Oficina, 35.0-35.9, Puerto la Cruz....2.80
- Tia Juana, Medium, 26.0-26.9, Amuay....2.30
- Bachaquero, flat, La Salina....1.85
- Lagomar, 31-31.9, Cardon....2.55
- Lagunillas Heavy, flat, La Salina....2.07

†Differential per deg. of grav. varies

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....$1.80
- Safaniya, 27.0-27.9, Ras Tanura....1.47
- Iran, 34.0-34.9, Bandar Mashur....1.78
- Iran, 34.0-34.9, Abadan....1.73
- Iraq, 35.0-35.9, Fao....1.72
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.59
- Qatar, 41.0-41.9, Umm Said....1.95
- N. Zone, Burghan, 23.5-24.4, Mina Saud....1.48
- N. Zone, Ratawi, 23.5-24.4, Mina Saud....1.41
- N. Zone, Eocene, 16.5-17.4, Mina Saud....1.28

Middle East, Eastern Mediterranean
- Arabia, 34.0-34.9, Sidon....$2.17
- Iraq, 36.0-36.9, Tripoli, Banias....2.21

North Africa, Phillipeville, Algeria
- Hassi Messaoud, 48 and above....Withdrawn

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- **U.S. Gulf-New York, clean..(USMC+25%) $3.56↑**
- **U.S. Gulf-New York, dirty..(USMC—10%) $2.56↓**
- **NWI-USNH, dirty....(USMC—20%) $2.20↑**
- **NWI-UK/Cont., dirty....(Scale—30%) 22/11*↑**
- **Pers. Gulf-UK/Cont., dirty (Scale—17½%) 46/7*↑**
- Persian Gulf-USNH, dirty....(USMC—55%) $5.72

**Sterling*

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HUMBLE OIL & REFINING CO. has appointed four vice-presidents to head its four new operating regions for exploration, production, and marketing. The new corporate setup eliminates the Carter, Esso, Standard, Humble, and Oklahoma-Pate Division. **Ray H. Horton** is vice-president in charge of the new Southwest region, Houston; **Russell H. Venn** is vice-president in charge of the Southeast region, New Orleans; **John W. Brice** is vice-president for the Central region, Tulsa; and **William W. Bryan** vice-president for the Esso Standard, Eastern region, New York. **J. Prince Warner** has been appointed vice-president and general manager of Humble's new manufacturing department, which will operate all the Humble organization refineries. **Fred A. L. Holloway** has been named vice-president for manufacturing in the coordinating and planning group in Humble headquarters at Houston. **James H. Galloway** is general manager of the Southwest region, which includes part of the area of the former Humble Division, and **Carl G. Herrington** is general manager of the new Southeast division, which covers part of the Humble and Carter exploration and producing areas, and the southern states in which Esso is now marketing. **Robert O. Goodykoontz** becomes general manager of the Central region, which includes most of the states formerly served by the Carter and Oklahoma-Pate Divisions. **Alex A. Diffey** has been named general manager of the Eastern region. It will include 13 eastern states, and Humble's Ohio Division. That division will become the Ohio area of the Esso Standard, Eastern region, and it will market in the name of Humble Oil & Refining Co., Ohio area.

JAMES D. WILLSON has been elected financial vice-president of Tidewater Oil Co., Los Angeles. He has been manager of finance since **Richard D. Russell**, former financial vice-president, retired last May. In addition to his new position, Willson will continue as controller, a position he has held since he joined Tidewater in 1959. Before that, he was financial vice-president and a director of Norris-Thermador Corp., Los Angeles.

J. D. Willson

W. C. Brodhead

W. C. BRODHEAD moves up to departmental coordinator of Gulf Oil Corp.'s transportation department, with offices in Pittsburgh. He will be responsible for the development of transportation plans and programs, and will serve in a liaison capacity with other departments of the company in exchanging information for such coordination. Brodhead, who joined Gulf's marine department in New York in 1926, was promoted to manager of costs and economic performance there in 1955. In 1958 he transferred to Pittsburgh and was promoted to marine coordinator, responsible for the coordination of all marine transportation, including planning, economics, cost control, and scheduling. He moved back to the New York marine department in the same capacity in 1959.

H. DEAN CHRISLIP is manager of the new crude oil supply and transportation division of Kerr-McGee Oil Industries, Inc., Oklahoma City. The new division replaces the crude oil supply and pipeline divisions. Chrislip was formerly general manager of the pipeline division. The crude oil supply division has been headed by **J. H. Tubbs**, general manager, who recently retired. **Byron T. Foster** has been appointed manager of purchases and sales in the new division. He was formerly a crude oil representative. Other personnel in the newly consolidated division,

who continue in their former positions, are **J. T. Hardman**, manager of crude oil movements, and **V. A. Smith**, manager of engineering.

D. G. L. BEAN has been appointed general manager of the supply and development department of British Petroleum Co., London. Bean, who joined the company in 1936, became assistant general manager of the supply and development department in 1955. A year later he was transferred to BP Tanker Co. as deputy general manager, and in 1958 he became general manager of BP Tanker. **P. A. Medcraft**, formerly assistant general manager, technical coordination, for BP Tanker, will succeed Bean as general manager.

D. G. Bean

A. Gregersen

ALBERT GREGERSEN has been appointed area representative for Denmark, Sweden, Norway, and Finland for Gulf Oil Corp. He will report to Gulf's management on various activities in these countries that might be of interest to the company. He will also be a part of Gulf European Co., reporting to **Col. F. T. Davies**, vice-president and coordinator of Gulf European, in London. Gregersen, most recently coordinator of Gulf's production department in Pittsburgh, was honored by King Frederick IX of Denmark in 1959 for contributions in furthering good relations between Denmark and the United States; he was made a Knight of the Order of Danneborg. Gregersen joined Gulf in 1945 as vice-president and branch manager of Danish American Prospecting Co., then a Gulf Subsidiary in Copenhagen. In 1955 he was named staff representative for Eastern Hemisphere production in Pittsburgh, and in 1957 was elected vice-president of Gulf Eastern Co., and transferred to London. He returned to Pittsburgh, and was appointed to his most recent position, in 1959.

RICHARD R. DeGRAF has been elected vice-president of American Mineral Spirits Co., Western, Los Angeles. DeGraf joined the company in 1958 as a sales representative, and was later appointed manager of the company's office and terminal in Oakland, Calif. He has been responsible for the marketing and distribution of Amsco's complete line of naphthas, industrial solvents, and related chemicals in the entire San Francisco Bay area.

JOHN J. McCARTHY, formerly vice-president of Eastern States Petroleum & Chemical Corp., Houston, has joined Cirillo Bros, New York, independent marketers.

KERRYN KING, vice-president and assistant to the chairman of Texaco Inc., has been named chairman of the petroleum committee of the United Hospital Fund of New York campaign. King will lead his committee of volunteers in the campaign for funds among executives of companies in the petroleum industry.

JOHN K. McKINLEY has been appointed general manager of the petrochemical department of Texaco Inc., with offices in New York. He was most recently manager of commercial development processes at Texaco's research and technical department at Beacon, N. Y. McKinley, who joined Texaco in 1941 as a chemical engineer at its Port Arthur (Tex.) plant, transferred to Beacon in 1956. Shortly after that, he became assistant director of research there.

WILLIS A. STRAUSS has been elected president of Northern Natural Gas Co., Omaha, Neb., succeeding **John F. Merriam**, who is now chairman. Strauss will be the principal operating officer of the company, and Merriam continues as chief executive officer. Strauss, who has been executive vice-president for the past two years, was also elected a director. **A. B. Dilsworth**, a Northern Natural Gas senior vice-president, is also a new director.

W. A. Strauss

J. F. Redmond

JOHN F. REDMOND will become vice-president in charge of exploration and production for Shell Oil Co. of Canada, Ltd., in January, with offices in Calgary. He is now manager of Shell Oil Co.'s head-office exploration and production economics department, in New York. **E. G. Christianson**, who is currently on special assignment with the head-office exploration and production department in New York, will succeed Redmond there. Christianson was division production manager and chief exploitation engineer at Denver before he began his special assignment. Redmond, who has been with Shell since 1936, was appointed manager of the head office exploitation engineering department in 1955, and manager of exploration and production economics in 1959.

NORMAN NEWTON has been promoted to superintendent of Continental Oil Co.'s Wichita Falls (Tex.) refinery. He was formerly process superintendent at the Wichita Falls plant. He succeeds **M. H. Clark**, who has transferred to Panama as manager of a refinery now being constructed there by Refineria Panama, S. A., an affiliate of Conoco.

M. H. CLARK will be manager of the Panama refinery being constructed by Refineria Panama, S.A., jointly owned subsidiary of Continental Oil Co. and interests of National Bulk Carriers, Inc. The refinery is scheduled for completion early in 1962. Clark is currently superintendent of Conoco's Wichita Falls (Tex.) refinery. **Nat H. Neville** transfers from Conoco to the Panamian company to become its controller. He is currently assistant director of Conoco's receipts and disbursements division in the financial department at Ponce City, Okla.

ROBERT E. VICKREY, senior gas engineer for Sun Oil Co., is chairman of the Dallas section of the Society of Petroleum Engineers of AIME for 1961. He succeeds **J. H. Sullivan**, Atlantic Refining Co. Other officers for 1961 are: **Tom G. Calhoun II**, DeGolyer & MacNaughton, and **Tom L. Kennerly**, Core Laboratories, Inc., vice-chairmen; **Sidney H. Davis**, Atlantic, secretary; and **H. Ed Ellis, Jr.**, engineer for the Republic National Bank, treasurer.

GENE L. SHAW moves up to regional geologist for the Rocky Mountain region of Lion Oil Co., division of Monsanto Chemical Co., with offices in Denver. Shaw succeeds **T. W. Lins**, who is transferring to Lion's technical advancement route, a newly organized program. Shaw joined Lion in 1959, after a three-year association with Forest Oil Corp.

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DON'T FORGET THE BOX NUMBER

What's the Outlook for Next Christmas?

CHRISTMAS STOCKINGS in the oil industry will be filled with more goodies than were expected back about mid-year—but not filled to the extent that had been anticipated they would be at the start of this year. Put another way, the industry didn't behave as well as it should during a good part of the year.

The many entities in the industry have been scolded severely for their many shortcomings in 1960. Despite their overindulgence, however, they will end up the year with reasonable profits. But now is the time that the thinking should go into the resolutions for 1961 operations.

Thanks to the recent blast of cold weather over a good part of the nation, the wise actions of a few state regulatory commissions, and pure luck, the oil industry will start out 1961 in pretty good shape, inventory-wise. There is a growing surplus of gasoline in storage, however, that could bring trouble next spring. That is a situation that will require careful planning by refiners.

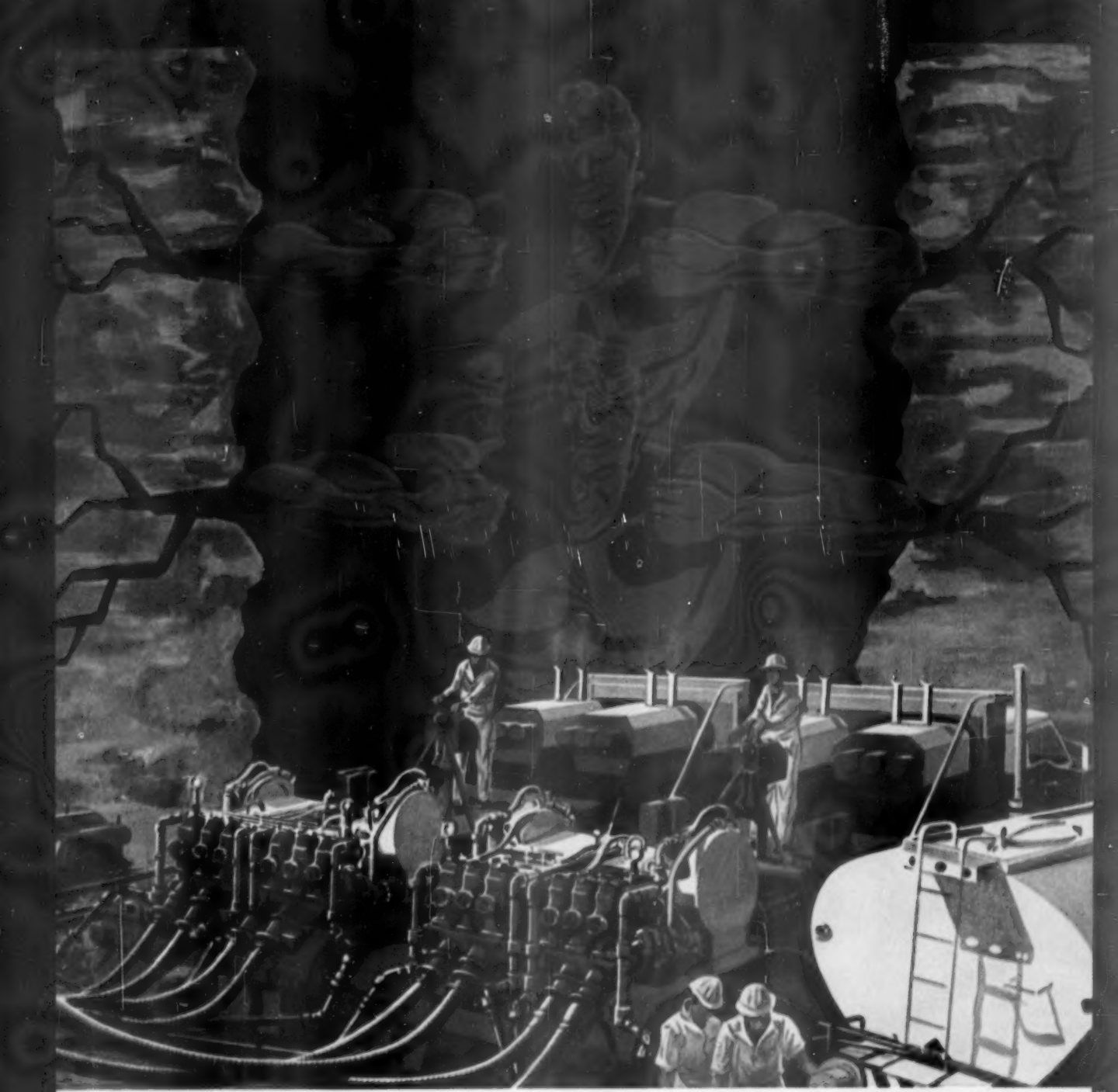
UNLESS THE INDUSTRY plans from the start to keep its supply in balance with demand in 1961, the year will take the same turn as the past three years, and a substantial oversupply could develop. All of the advance forecasts for 1961 take the tone of a moderate rate of growth in demand—in the order of 2%. In terms of barrels, the increment now expected in 1961 is 200,000 b/d.

That modest rate of gain is hedged with a lot of ifs—normally cold weather in the first quarter, a lot of vacation driving in the second and third quarters, and good weather for farmers in both the planting and harvest seasons. A slight variation in any of those ifs could throw things out of kilter.

There's no question that the outlook, while not pessimistic, calls for extreme caution by the industry. In recent weeks, several company chief executives have pledged their individual support to make every effort to maintain a proper balance within their own companies. That's encouraging, but it must be followed by the whole industry if the delicate balance between supply and demand is to be maintained.

TO REMIND ONE AND ALL, product prices last May declined to their lowest level in five years. Then cutbacks were made, and marketplace prices gradually improved. They are still below the level of 1957, however, even including the slight advance in distillate prices in the past few days. Progress has been made, for sure, but there's no reason it can't be continued.

It's up to the industry just what the prospects for the New Year will be.



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